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Role of Information Technology

Highlights

Low Cost Housing Development

Analysis of Factors Determining

Discovering Thoughts, Inventing Future

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Contents of the Issue

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The Socio-Economic Dilemma and Challenges of Population Growth of OGU Urban Town as a Nigerian Rural Community

By Past. Dr. Abomaye-Nimenibo, Williams Aminadokiari Samuel, Barister (Miss) Abomaye-Nimenibo, Comfort Tamunobarasinpiri & Mr. Minabere, Harry Abomayenake
Obong University

Abstract- The essence of this study was basically to examine objectively the socio-economic dilemma and challenges posed by population growth tothe indigenous people of Ogu Urban Town in Ogu/Bolo Local Government Area in Rivers State, Nigeria. We adopted the cross sectional survey design. The population study was solely based on the indigenous people of Ogu Urban Town of Ogu/Bolo Local Government Area of Rivers State using the adult population from the age of 18 and above. Ogu/Bolo Local Government has a total population of 74,683 people living in the communities.

Keywords: fishing, trading, peasant farming, economic activities, legitimate trade, indigenous people of ogu urban town, population growth, socio-economic resources, economic performance, huge economic resources, savings, foreign exchange, human resources, social economic life, optimum population, overpopulation , under-population, standard of living.

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The Socio-Economic Dilemma and Challenges of Population Growth of OGU Urban Town as a Nigerian Rural Community

Past. Dr. Abomaye-Nimenibo, Williams Aminadokiari Samuel [α], Barister (Miss) Abomaye-Nimenibo, Comfort Tamunobarasinpiri [σ] & Mr. Minabere, Harry Abomayenake [ρ]

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Author α: Ph.D, M.Sc, B.Sc Economics, MBA Management and UD, Personnel Management and Industrial Relations, Director of Post Graduate Studies, School of Post Graduate Studies, Obong University, Obong Ntak, Etim Ekpo Lga, Akwa Ibom State.
e-mail: wasanim2006@yahoo.com
Author σ: BA, LLM LAW and Ph.D Law in View Middlesex University, London.
Author ρ: M.Sc in View.

I. Introduction

OGU Community is the second largest town among the Wakirike Be Se communities (i.e. Okrika nation) in Rivers State of Nigeria. It is about 45 minutes' drive from Port Harcourt. It is a chieftaincy community with respectable chieftaincy institution that binds the community together. It is one of the 24 designated Urban Areas carved out in 1987 by the Rivers State Government, and the Local Government Headquarter of Ogu/Bolo Local Government Area in Rivers State of Nigeria created on 1st October, 1996 by the Late SaniAbacha's Military Regime. Kudos to that regime! The LGA has an area of 34 square kilometres (89 km^2) with a population of 74,683 during the 2006 census. Ogu Urban Town is contextually used in synonym with Ogu/Bolo LGA.

Ogu with her satellite settlements is surrounded by Eleme LGA in the North, Tai LGA in the North East and Bonny LGA in the South-South, WakamaAma and Bolo communities (which are part of the Local Government) in the South and Okrika LGA in the South-West, while Andoni LGA in the South-East. It could be reached by air, sea and land. It has well over 50 satellite villages and fishing settlements that could be reached through air and sea on Ogu creek and the Bonny River, while others by land through Eleme and Tai LGAs. Some of the satellite villages and fishing settlements include: Tende Ama, Ada Ama I, Ada Ama II,Tamuno Ama (Ofunguru Ama), Yude Ama, New Ogu (Kporo Ama),

Chuku Ama, Nemieboka Ama, Igafe Ama, Tendefe Ama, Olobulo Ama, Brown Ama, Afaka Ama, Agakien Ama, Daso Ama, Owukiri Ama, Omodarani Ama, Piri Ama, Ogobo Ama, Iwomabie Ama, Ogweinbie Ama, Owupele Ama, Fombo Ama, Siere Ama, Ogugu-Chuku Ama, Igbikiyemieari Ama, Tububie Ama, Orubie Ama, Anigoboka Ama, Atubonacheofoin-a Ama, Nyanabo Ama, Ogonotoru Ama, Ilanga/Yikabo Ama, Febie Ama, Amabara Ama, Adufe Ama, Chuku Ama II, Ikikafipiri Ama, Olomusoko Ama, Ikpokiri I, Ikpokiri II, Ikpokiri III (Wharf), Tombikuku, Owugono, Ibiorika Kiri, Ibiebele Kiri, Orabere Kiri, Yikabo Kiri, Gream Kiri, Odo Kiri, Abereniboye Kiri, Adokiye kiri, Owuapuigbiki Kiri, Kulo Kiri, Sani Kiri, Apanatibo Kiri, Ipiangbafibumo Kiri, Bumo Kiri, Semenibipi/Iyo Kiri, Ichi Kiri, Adolphus Nemieboka Kiri, Niniapukiri, Agakien Kiri, Otobipi Kiri, Mbi Kiri, Fulobele Kiri, Mgbemgbeboko (Fubara Kiri) and so many others which are doted all over the scape of the Eastern Niger Delta. Other towns in the LGA are Ele Town with her villages, Bolo Town with her villages and WakamaAma. The people of Ogu are metropolitan in outlook; therefore, settlements taken as villages are actually big towns in other places.

Ogu also has neighbouring communities such as Sime, Barale, Barayira, Norkpo and Nonwa, all in Tai LGA. Others are Eteo and Onne in Eleme LGA, and Dutch Island, Okochiri, and Okoro Ama in Okrika LGA, as well as Bolo and Wakama Ama communities in Ogu/Bolo LGA that share boundaries with her.

Ogu/Bolo Local Government Area is economically viable. Fishing, trading and peasant farming are the main economic activities of the people. Trading is principally with her contiguous communities of Tai, Eleme, Bonny and Andoni. The introduction of "legitimate" trade by Europeans at the middle of the last century increased the volume of commercial activities in Ogu/Bolo LGA as more and more people from far and near came to Olobulo market, Adufe, Olomusoko and Tendefe to carry on the "large trade" which Consul Ralph Moor spoke about in 1896.

With the penetration of the missionaries came Christianity and Western education, and the people embraced both. Thus, in 1966, the magnificent St. Martins' Anglican Church was completed and dedicated to God in Ogu. Even today, the church stands, not only as a marvellous architectural edifice, but also, as a monumental and durable evidence of a peoples' ancient devotion to progressive thought and action in the Western belief and faith in God.

In 1972, Government Secondary School, Ogu, the first post primary school in Ogu/Bolo LGA was established by the then Military Governor of Rivers State Navy Commodore Alfred Diete-Spiff and it started lessons in September, 1972 at the Primary School and the General Hospital Buildings before moving to its permanent site. The first Principal of the School was Mr. H.L. Ogan. For many years, this college remained distinguished from others by its priority of distinction and has made Professors, Doctors of Philosophy, Engineers and Medical Doctors that could not be numbered from all the LGA's of Rivers State and beyond, pushing its popularity both in the West and Middle-belt of Nigeria.

The first author of this article was a product of this citadel of learning, being the third set of students it turned out into the Nigerian Labour Market. By the mid-70s, Ogu could boast of a modern hospital, good drinking water and tarred road. The Bolo Community also has a Secondary School, Primary School and a Health Care Centre while the Wakama Community has a Primary School and a Health Care Centre. The Ele Community has a Government Craft Centre which is at his temporary site at the flanks of Ogu Urban Town.

In any event, the civil war, the creation of LGAs in the country and the great expansion of oil exploration and exploitation activities have had their effect on the people of Ogu. There is no doubt that there is some evidence of development all round. There has been, for instance, a significant increase in the number of educational and health institutions in Ogu/Bolo Local Government Area as well as being connected to the national grid.

Yet, Ogu that is one of the early participants in the march to civilization and progress, a lot more profound evidence of development must be demanded from it as the 21st century rolls to a close. Ogu has within its territory three oil wells known as IkpokiriBie called Ogu I, DasoAma called Ogu II and Agakien called Ogu III as proved by seismic surveys under the supervision of Alakiri oil field that started production in 1970. The Bolo Community also has two oil wells which drilling is on-going.

In addition to this, Ogu hosts several strategic establishments of National interest such as the Federal Lighter and Ocean Terminals, Onne/Ikpokiri Oil and Gas Export Free Zone Authority, "The Nigerian Ports Authority (NPA), Intel Nigeria Limited and several service companies. They are located on the left bank of Ogu creek, from Bonny River. In spite of all these, Ogu people, to use a cliche, have nothing to show for it. What gains they have had is only in the form of the devastation of the land and sea-scapes with the attendant health hazards from oil spillage and bunkering activities.

The people of Ogu Community have a culture that is distinctive, impressive and to a large extent without influence. Featuring prominently in the culture of Ogu people are the Iria puberty and marriage ceremonies, wrestling, traditional plays, burial rites, installation of chiefs and traditional rulers ceremonies and many other rites and plays connected with the day to day life of the people. All these attracts population to the town, hence increases commercial activities.

Masquerades, some of them colourful and artistic in either their make-ups or paraphernalia, are a

common sight throughout the community and the entire Local Government Area, especially during festive occasions. In concept, these are either religious or historical or personifications of the rich legends of the people, and their classic performances, backed up by the refreshing poetry of songs and music, which bring to focus the high sense of drama and entertainment of the people, hence the concentration of people in this LGA.

A variety of dances, each unique in its form, also abound. Musical instruments include pots and drums, wooden gongs, horns and xylophones. All these are made locally by experts with an ancient tradition behind their craftsmanship. Ogu is known for her skilful use of earthen clay to mould earthen pots for music, drinking water containers, carving of masquerades and ceremonial canoes etc. is a revered art and carvers have greatly improved the quality of their work over the years. Gradually, the purely functional forms of these carvings are being given new dimension and finishing's that reflect the people's innate respect for aesthetic values.

The dances, plays and masquerades depict the religious, social and working life of the people which brings in economic value to the people and the LGA. In turn, the life of the people has been greatly influenced by their culture. Thus, a spiritually enabling circle has been set up. The Ogu man's (Okrika-Ijaw) confidence, is his love of truth, fair-play and wholesome dealings that can all be traced to the influence of his unique cultural heritage.

Above all, the Ogu kingdom is hospitable to strangers and citizens. They are lovers of God, Music, Entertainment and Strangers, and none the least, are warriors having spectacular war canoes ever leading the entire warriors of the Wakirike Be Se Kingdom. She never losses battles she ever engaged in. Her people are great travellers and have travelled round the globe. She has migrated a lot and has families in other towns such as Bonny, Tombia, The Camerouns, just to mention but a few as well as annexations and sister towns founded by her indigenes even in Cameroun. The citizens of Ogu are industrious and commercially inclined as well as peace loving.

The question considered here is how does population growth affect the direction and magnitude of socio-economic lives of the people of Ogu in Ogu/Bolo local government area of Rivers State as Nigeria's population approaches 180 million, especially in this era of dwindling economy? Over the years, it has become established that the existence of an efficient and effective human capital is the key to socio-economic growth and development in any nation. This stems from the fact that every other facility and resource required for economic growth is driven by the availability of human capital. More so, in the absence of effective human capital development, an increasing population can have adverse negative effect on the economic growth of a nation. This is because a lot more resources are taken out to manage and cater for the teeming population that the same can generate, (Brand, 2009).It is therefore correct to state that the economic growth of a nation is significantly dependent on the growth of its population in the rural communities of that nation. The effect or impact can be either negative or positive depending on the existence of certain factors and conditions. When the existing factors and conditions are studied and understood, then the socio-economic life of the people can be managed or controlled to ensure continuous and sustainable economic growth and development (Dennis, 2004). Nigeria is one of the fastest growing economies in the world. According to Nigerian Population Census (2006),with an estimated population of 140 million and an annual population growth rate of 2.9%, Nigeria is the most populous nation in sub-Sahara Africa and the tenth most populous in the world. However, the composition of this population is dependent on the population of each community with 49% contribution from the rural life, (UNDP, 2007).

With the UNDP (2007) statistics, the population growth shows profound inequalities and disproportions when analysed with development indicators such as 21 doctors per 100,000 people, infant mortality rate of 112 per 1000 life births, maternal mortality of over 980 per 100,000 life births, life expectancy in the community is at birth projected at 50 years. Therefore, it can now define population growth as the increase in the number of human inhabitants of a given place.

The total population of any area of the earth's surface represents a balance between two forces. One is natural change caused by the difference between the number of births and deaths. If births are more in number than deaths in any period, the total population will increase. However, if they are less in number it will decrease. This simple relationship is modified by a second force known as migration concept. When immigrants are numerically more than emigrants, there will be a population increase. On the other hand when emigrants are more in number, there will be a population decline (Ben, 2005). Ben went on to say that net changes in population totals are caused by the interaction of four elements of Births and Immigrants who tend to push the total up, while Deaths and Emigrants tend to bring the total down. Although migration may be the most important factor in small areas for example, in a small village or a city block, it is less significant on the national level.

For the world as a whole, migration is irrelevant because all movements take place within the limits of the geographical enclave. However, overpopulation is described as a condition where the number of people exceeds the carrying capacity of its habitat. Migration usually refers to the relationship between the human population and its environment, the earth. Overpopulation does not depend only on the size or

density of the population, but on the ratio of population of available sustainable resources. It also depends on the way resources are used and distributed throughout the population (Andrew, 2001).Matching population growth with development is the real object of global and country action towards improved welfare, human development and economic growth. The changing patterns in the size, structure and distribution of population leads into the persistent shifts in the choice of approaches for managing development (Rostow, 1998).

The population of an economy has been one of the most important factors when it comes to growth in the socio-economic life of the rural communities. In most situations it is presumed that population and economic growth in the rural communities has inverse or negative relationship. It has been proven in developing countries like Nigeria that as the country's population increases beyond normal limits, pressure is exerted on basic amenities such as healthcare and education, which means that governments always have to over spend their budgets to provide these basic amenities in situations of high population growth. The multiplier effects are usually unemployment, falling standards of living, loss of access to social amenities as a result of government insufficient presence and reduced GDP of the overall economy. Meier (2005) is of the view that high population growth does not only create food problems but also limits savings, foreign exchange and the development of Human Resources. Because of these perceived constraints to economic growth as a result of population growth, it was very common to see UNDP and its affiliates supporting governments in some communities who are lucky to attract such presence to develop proactive ways in helping to reduce their alarming population growths and poverty in such rural communities. On the other hand, specifically, Rivers state in Nigeria is the sixth highly populated state having a population of 5,185,400 with the density of 468/km^2 (1,210/sq.m) with huge economic resources (NPC 2006). However, the pondering question in this study is whether the economic performance of Rivers state actually denotes the huge economic resources and labour resulting from high population rate so as to positively affect her rural communities. Therefore the researcher had chosen to Ogu in Ogu/Bolo Local Government Area of Rivers State as a rural community having a growing population of 74, 683 according to the 2006 National population Census figure.

II. Statement of the Problem

It is undeniable that Nigeria vis-à-vis Rivers State population is growing in an alarming rate. Before the 2006 census exercise, Rivers State population stood at 3,187,864 with 51.9 per cent of the population being males and 1,532,217 or 48.1 per cent being females. But then the population grew very fast to 5,185,400 in a few years. Rivers State as at then account for 3.58 per cent of Nigeria's population while in 2006 it accounted for the 6th most populated state in Nigeria. The population of Rivers State is unevenly distributed among LGAs, towns and villages, such that ecological and physical conditions underscore the observed population distribution pattern. However, Rivers State in Nigeria is known as one of the richest States with huge economic resources. But her population growth has not also matched with her economic performance although its industrial base before the recession was growing at a geometric rate in line with its population growth.

The population of an economy has been one of the most important factors when it comes to growth of an economy. In most situations it is presumed that population and economic growth has inverse or negative relationship. It has been proven in third world countries that, as a country's population increases beyond normal limits, pressure is exerted on basic amenities such as healthcare and education, which means that governments will always have to over spend their budgets to provide these basic amenities in such areas of high population density due to growth. The long run effects will be high debts, budget deficits, falling standard of living as a result of reduced GDP. Meier (1995) is of the view that high population growth does not only create food problems but also limits savings, foreign exchange and the development of Human Resources. Because of these perceived constraints to economic growth as a result of population growth, it was very common to see UNDP and its affiliates supporting governments in South America, Africa, Asia and eastern Europe in the early 1980's and 1990's, to develop proactive ways in helping to reduce their alarming population growth. On the other hand, most western economies are also experiencing dramatic reduction in their birth rates, due to the fact that most people sacrificed their family lives for their careers. Such dramatic drop in population growth in western countries has actually been a course of concern for governments and economists, especially because these western economies are also experiencing an aging population.

Engelman (1997:6) stated that population growth influences many areas of human affairs, not merely food, security or health or environmental quality or economic growth, but all these and more. It is still a source of concern especially in the developing countries, where a good percentage of the population is not engaged in productive activities. Birth rate is on the increase due to increase in fertility whereas death rate is reduced due to improvement in the medical services.

According to Henderson and Poole (1991:109), in most markets, rising population shifts demand curves out and that total demand in a country with a large population is greater than in a country with a small population. Henderson and Poole further stated that, so many demand studies are based on per-capita data that

is, breaking down the population by age group and/or other characteristics and selecting a particular group appropriate to the study.

Abomaye-Nimenibo (2008, 2017) stated that in developing countries, high population growth will result to excess demand for goods and services which will in the long run affect aggregate demand and stimulate growth in an economy.

Therefore, the question that readily comes to mind is - why is population growth a hindrance to economic growth for some countries and on the other hand a key to economic growth for other countries? The answer may be in structural reforms or per capita resources. But it is a proven fact that population growth can actually support a country's economic growth, especially because a high population growth can provide the appropriate labour force to support the economy, it also expands the domestic market, which means that local manufacturers and suppliers can increase their wealth; and finally high population growth which will encourage competition in the market place and thus resulting in innovations and technological advancement, and a typical example is that of China and Indonesia.

Emerging markets are the hottest destinations of Foreign Direct Investments (FDI's) today. According to the IMF report in 2011, emerging markets help to bring about 52% share of the world's total FDI's in 2010. IMF stated that the 8 largest emerging markets are at an advantageous position when it comes to attracting FDI's, and this is due to their market size. Today most investors seek to be more efficient and therefore seek for markets with new technology, competitively priced inputs and labour as well as new channels of distribution. Therefore, an economy's size matters when it comes to FDI's. According IMF, the world 10 largest economies account for nearly 47% of FDI'S in 2010. United States of America remains at the top destination list for FDI's, receiving $228 billion followed by china which receives $106 billion.

There are strong evidences to suggest that population increase can result in the growth of output believing that Rivers State especially in her rural communities will experience similar development. On the other hand, the case may be different, hence the choice of Ogu Community in Ogu/Bolo LGA as the prima facia area to study. The fact need to be verified whether population growth will account for low standard of living, shortage or insufficient social amenities like good roads, education, health care facilities and other life enhancing business, leading to lower standard of living of the people and increase poverty and unemployment with Ogu Urban Town in Ogu/Bolo LGA of Rivers State? This means that as the population grows, demand for food consumption also increases. In a situation where economic resources are limited, then the resulting effect is low standard of living in the socio-economic lives of the people. It is therefore upon this bases that the researchers chooses to carry out this investigation to establish the fact or negate it using an urban town as a rural community.

III. Objectives of the Study

The main objective of this study is to examine the effect of population growth on the socio-economic life of the people of Ogu in Ogu/Bolo Local Government Area of Rivers State, Nigeria.

The specific objectives are:

1. To ascertain the magnitude of effect of population growth on socio-economic life of the people of Ogu/Bolo Local Government Area in Rivers State of Nigeria.
2. To ascertain whether the population growth has effect on the socio-economic resources available to the people of Ogu in Ogu/Bolo Local Government Area in Rivers State of Nigeria.
3. To ascertain the standard of living of the people based on high population growth rate in Ogu, Ogu/Bolo Local Government Area in Rivers State of Nigeria.

IV. Research Questions

The following research questions are used as a safe guard in support of the hypothesis. They are as follows:

1. What is the effect of population growth in Ogu/Bolo LGA?
2. What are the socio-economic resources available to the people of Ogu in Ogu/Bolo Local Government Area of Rivers State?
3. What is the standard of living of the people based on high population growth rate in Ogu, Ogu/Bolo Local Government Area of Rivers State?

V. Research Hypotheses

The research hypotheses are as follows:

1. Population growth has no significant effect on the socio-economic life of the people of Ogu/Bolo Local Government area in Rivers State of Nigeria.
2. There is no comparative advantage of population growth and socio-economic resources available to the people of Ogu, Ogu/Bolo Local Government area in Rivers State of Nigeria.
3. The standard of living of the people has no significant relationship with the high population growth rate in Ogu, Ogu/Bolo Local Government Area in Rivers State of Nigeria.

VI. Significance of the Study

Findings in this research will provide support for governments to adopt structural reforms that can support its population in economic development and growth.

Investors are constantly looking for new areas to invest and such a research can actually help these investors to determine some of the markets that hold investment potentials, especially the newly semi-developed areas.

The research seeks to compliment the efforts of past researchers in their attempt to draw a line between population growth and economic development. Attempts will be made to concretize or question the claims and assertions made by past researchers. This research will also lend credence to future research on the subject.

Over the years the World Bank and the IMF has been developing different structures to help economies fight poverty, and thus the findings from this research is believed to be one of the development tools that the World Bank and IMF can use to support the different economies to promote growth and development.

The researchers would want this research to educate the reader not only on the relationship between population and economic growth but also on how an economy works.

VII. Operational Definition of Terms used in this Research

Population Growth: Population growth is the increase in the number of individual people in a population constituency.

Socio-Economic Life: Socio-economic life refers to the social norms, ethics and other social aspect of life that are or not available, as well as beliefs regarding the direction that life should go.

Optimum Population: Optimum population refers to the size of a population that produces the best results according to chosen end targets.

Over Population: Overpopulation is an undesirable condition where the number of existing human population exceeds the carrying capacity of the earth.

Under Population: Under-population is usually defined as a state in which a country's population has declined so much to support its current economic system.

Standard of Living: Refers to the level of wealth, comfort, material goods and goals necessities available to a certain socio-economic class in a certain geographical area, usually a country.

VIII. Literature Review and Theoretical Framework

a) Conceptual Literature

Nigeria has a growing population and what can also be referred to as an increasing population. The 1991, census figure put Nigerian population at about 89 million people with the growth rate of 2.82 and the total fertility rate as revealed by Post Enumeration Survey (PES) at 5.89 per cent. The Nigeria Demographic and Health Survey ((NDHS), 2003 and 2008)) put the total fertility rate at 5.7 per cent as against its report of 1999 which put the figure at 5.2 per cent. The 2006 Nigerian National Population Censuspegged her population at one hundred and forty million, three thousand and five hundred and forty two (140,003,542) as per National Bureau of Statistics report of 2009. The growth rate was 3.02 per cent per annum. The population is said to be capable of doubling itself in less than twenty three years. In addition, the United Nations estimates of 2009 put the Nigerian total population at one hundred and fifty one million, thirty thousand and four hundred (151,030,400). Nigeria is the most populous country in Africa and also the most populous among the black nations of the world. Globally, Nigeria is among the ten top countries with the largest population, and in-fact, the seventh among the countries with the largest population in the world (United Nations, 2009).

The population of an economy has been one of the most important factors to be considered when it comes to growth in the socio-economic life of rural communities. In most situations it has been presumed that population and economic growth in the rural communities has inverse or negative relationship. It has been proven in developing countries like Nigeria that as the country's population increases beyond normal limits, pressure is exerted on basic amenities such as healthcare and education, which means that the government of Nigeria, always have to over spend their budgets to provide these basic amenities in situations of high population growth. The multiplier effects are usually unemployment, falling standards of living, loss of access to social amenities as a result of government insufficient presence and reduced GDP of the overall economy. Meier (2005) is of the view that high population growth does not only create food problems but also limits savings, foreign exchange and the development of Human Resources. Because of these perceived constraints to economic growth as a result of population growth, it was very common to see UNDP and its affiliates supporting governments in some communities who are lucky to attract such presence to develop proactive ways in helping to reduce their alarming population growth and poverty in such rural communities. On the other hand, specifically, Rivers state in Nigeria is said to be the sixth highly populated state having a population of 5,185,400 with the density of 468/km^2 (1,210/sqm) with huge economic resources (NPC 2006). However, the pondering question in this study is whether the economic performance of Rivers state actually denotes the huge economic resources and that of labour resulting from high population rate so as to positively affect her rural communities. Therefore, the researchers of this study had chosen to direct the investigations to Ogu in Ogu/Bolo Local Government Area of Rivers State which has a population of 74, 683

according to the 2006 National population Census figure.

IX. Theoretical Framework

Malthus and Smith, (1798) stated that there is a marked difference in the models of technological and economic growth proposed by Malthus and later Solow, which allow for no per capita growth of income as capital is fixed. However, later models do allow for per capital economic growth which appears to fit the observable conditions in the recent past. While the Malthusian model is considered accurate in pre-industrial societies, yet it fails to work out correctly in industrialized environments. Reconciliation of the differences between the two fundamental environments, have created multiphase models which allow for Malthusian, Post-Malthusian and Modern regimes, as stated by Galor and Weil (1998), while other scholars such as Simon-Steinmann (1977 and 1986) have created two models, one of each of the two stylized named the More and Less Developed Countries (MDC and LDC respectively), and treating the two groups as distinctly separate. The rationale behind this distinction is that a demographic transition has occurred in one (the MDC) and is now beginning to occur in the LDC nations but under different circumstance; and most of these circumstances that occurred are economic in nature and the tacit assumption is that economics is the driving force behind the transition and not the other way round as has been postulated by Knodel and Van De Walle (Greenhalgh, 1995). In the case of Galor-Weil model, there appears to be an assumption that today's economic world is different from the one that Malthus observed. Simon does not explicitly make this assumption and did not deal with any historical perspective earlier than the industrial revolution but rather put forward anecdotal evidence of Greece and Rome in *"The Ultimate Resource",* in part due to lack of economic data.

If today's economic environment is operating under the same mechanisms as before, there is a question that readily comes to mind –whether current growth models accurately portray not just trends of population and economic growth but also elucidating the mechanisms by which the economic growth occurs? Based on the need for multi-phase models as well as separately handling of different types of economies, there is a reason that they do not. Simon (1977) dismisses the effect of demographic anomalies on the short-term economics of nations in favour of long-term trends. He specifically dismisses the impact of age-structure and dependency ratio on economic growth as minimal compared to that of the level chosen for the savings rate. What he does not deal with is the possible effect the age-structure and other demographic dynamics may have on the saving rate. Assuming there is a demographic effect on the level of investment, and then it only stands to reason that these population dynamics have an effect on the short-term and long-term economic growth of the economy. He went further to say, due to speed of the current demographic transition in LDC nations, these effects may be exacerbated and causing current observable conditions to appear differently from those conditions leading to the wealth of the MDC nations. Using a simplified illustration based on current anthropological theory, the framework for the link between population growth, population size, carrying capacity of the land and economic growth will be explored. This possible link may also help elucidate some of the possible mechanisms for economic growth; something which Simon does speak little of, as he tends to approach the subject from the standpoint of having the model match known trends. The following models are therefore considered adequate for this study.

a) Simon-Steinmann Economic Growth Model

The basic idea to the theory proposed by Julian Simon and Gunter Steinmann is that the greater the total population, the greater the level of technological growth yielding the greater per capita income. This idea is said to have been derived from Boserup which was referred to as the Population Push model, and distinguishes between current knowledge and knowledge being applied for production (Simon 1977). Underlying the population push model of technological development is the added idea that technology can and does develop independent of population growth (learning-by-doing) and therefore technology builds upon itself, reconciling the pull and push models of technological progress. So even in the case of a static population, there will be some level of technological advancement, which may be slower in situations of growing population. This technological progress function is added to the Douglas-Cobb production function to produce a model containing endogenous technological progress based on population growth and learning-by-doing. If this model, labour supply and population are used synonymously as he dismisses the impact of age-structure and dependency ratio on economic growth as minimal to the effect of the savings rate. He uses Japan and the US as an example of the disparity between savings rate and the effect it has on output (Simon 1977).The results of the model yield modest per capita economic growth at equilibrium and Simon determines that maximized long term economic growth (always in per capita terms unless otherwise noted) requires 1-2% per annum population growth and a 2-4% rate of savings with a low discount rate below 4%. At a higher discount rate of 5-10% there was still increased consumption. This population growth rate, he made clear, is higher than the rate that produces the highest adoption of technology (Simon, 1986). Any growth that occurs too fast will have diminishing return or create a circumstance where it stagnates. On the other hand a

modest negative population growth will have the effect of limiting growth but large negative out flows in population will stagnant growth out-rightly. The level of total technology (available and in use) never decreases since this is, in his estimation, illogical.

British political economist Rev. Thomas Robert Malthus (1766–1834) who was regarded as the first professional demographer buttressed this point in his first and the most influential book on population growth. In his book (Essay on the principle of population), he wrote many years ago about the possible consequences of a rapidly growing population. He explained that when population increases more rapidly than the food supply, there is going to be starvation with attendant problems. He went on to say that population is checked by war, diseases, famine, etc. Malthus' proposition looks relevant to Nigerian situation, where the population is growing geometrically. Rapid population growth is detrimental to economic and social development as often found in the literature and that there will be little or no time to adjust economy to developmental efforts. Population will continue to eat up any gain in economic development and these may lead to adverse effects on the people as put forward by Malthus.

Nigerian population requires and deserves urgent attention as a result of its alarming and unprecedented growth rate, as the population has gathered momentum. Regardless of any efforts, Nigerian population will continue to grow for some time. Nigerians need to learn from China's experience in the 19th century when the Qing government faced many problems associated with population growth. More and more people lived in poverty; they were unable to cope when floods or droughts occurred. The government of Qing was unprepared for the effects of population growth (Clunas, 2008).We hope that Nigeria will get prepared and saved for the rainy day.

b) Nigeria Census-Taking and Population History

Nigeria has engaged in different censuses in its fifty-seven years of existence. Initially, censuses were taken and restricted to only Lagos Island and part of the Mainland in 1866, 1871 and 1896. Many urban towns were included in the censuses of 1911 and 1921. There were variations in the Northern and Southern Protectorates as regards the census conducted in 1931. Though, the two were based mostly on estimates (NPC, 1998).

No effort was made to conduct census in 1941 due to Second World War and was later conducted in 1952/53. It was elaborate but probably under-enumerated the population of Nigeria. After the independence of Nigeria on first of October, 1960, census was carried out in 1962 (Iro, 1987). The result of the 1962 census was nullified and another one was conducted in 1963 (Ekanem, 1972). The result of this census was nullified also by the Supreme Court. In addition, the result of 1973 census was unacceptable (NPC, 1998).

1991 witnessed another census-taking and Post Enumeration Survey (PES) in Nigeria. This census was a successful attempt and it provided a robust set of socio-economic and demographic data for social and economic planning. The total population as at 1991 was 88,992,220. In 2006 about fifteen years later, a headcount census was conducted which revealed a total population that was more than 140 million people.

c) Demographic Transition Stages of Population

Demographers have generally examined trends in the population with the attendant postulation of demographic transition theory. According to Isuigo-Abanihe (2009), Thompson (2003) and Notestein (1945), a distinct explanation of these phenomenal changes, as well as the large changes among world regions, stemmed from the demographic transition theory, which was built on the experience of currently developed societies, and suggests that societies pass through five stages in the process of change. The five transition stages are explained as follows:

i *Stage One of demographic transition theory*

This is the pre-industrial society where death rates and birth rates are high and roughly imbalanced (i.e. fluctuated rapidly according to natural events, such as famine, drought, and disease). All human populations were believed to have been balanced until the late 18th century, when this balance ended in Western Europe. During the agricultural revolution, birth and death rates both tend to be very high in this stage and because both rates are approximately in balance, population growth is typically very slow in stage one.

ii *Stage Two of demographic transition theory*

In that of a developing country, the death rates drop rapidly owing to improvements in food supply and sanitation, this increases life spans and reduces diseases. The improvements were specific to food supply typically which include selective breeding and crop rotation and farming techniques. Other improvements generally include access to technology, basic health care, and education. For example, numerous improvements in public health reduce mortality, especially childhood mortality. Prior to the mid-20th century, these improvements in public health were primarily in the areas of food handling, water supply, sewage, and personal hygiene. Interestingly, one of the variables often cited is the increase in female literacy combined with public health education programmes which emerged in the late 19th and early 20th centuries. The death rate declined without a corresponding fall in birth rates which produces an imbalance and the country in this stage experience a large increase in population.

iii *Stage Three of demographic transition theory*

In stage three, birth rates fall owing to access to contraception, increases in wages, urbanization, a reduction in subsistence agriculture, an increase in the status and education of women, a reduction in the value of children's work, an increase in parental investment in the education of children and other social changes. Population growth begins to level off. The birth rate declined in developed countries when contraception improvement played a role in birth rate. Notwithstanding, contraceptives were not generally available nor widely used in the 19th century which did not play a significant role in the decline. Birth rate decline was caused by a transition in values and not just because of the availability of contraceptives.

iv *Stage Four of demographic transition theory*

In stage four, there are both low birth rates and low death rates. Birth rates dropped to well below replacement level, as it is happening in countries like Germany, Italy, and Japan, leading to a shrinking population, which is a threat to many industries that rely on population growth. As the large group that was born during stage two period continue existing, they create an economic burden on the shrinking working population. Death rates may remain consistently low or increase slightly as a result of increases in lifestyle diseases arising from low exercise levels, high obesity, and an aging population in developed countries. However, by the late 20th century, birth rates and death rates in developed countries levelled off at lower rates but not so with developing countries.

v *Stage Five of demographic transition theory*

In stage five, some theorists argue that a fifth stage is needed to represent countries that have sub-replacement fertility (that is, below 2.1 meaning 2 children per woman). Most European and many East Asian countries now have higher death rates than birth rates. In this stage, population aging and population decline will eventually occur to some extent if mass migration does not occur. However, some theorists submitted that there may be a further stage of demographic development. According to Myrskyla, Koller, and Billari (2009), advances in developments reverse fertility declines, showing that previously negative relationship between national wealth (as measured by the Human Development Index (HDI)) and birth rates have become J-shaped. Development promotes fertility decline at low and medium HDI levels, but advanced HDI promotes a rebound in fertility (Myrskyla et al., 2009). In many countries with very high levels of development (around 0.95) fertility rates are now approaching two children per woman, although there are exceptions, notably in Germany and Japan (Myrskyla et. al. 2009).

Demographic transition is said to be the window of opportunity for implementation of development-oriented government policies. So that one-type gift of the demographic transition is expected to provide lots of opportunities for development and economic gains. During the transition population, growth and changes in the age structure of the population are inevitable, if appropriate policies are pursued (Ingle and Suryawanshi, 2011). The debate on the relationship between population growth and economic development followed from the critics of the theory of Malthus in 18th century. While economists have often focused on the size of the population and the growth of nations, the composition of population age structure has not been considered under most of the studies (Coale and Hoover, 1958). But in recent years, demographers, such as Bloom et al. (1998), have studied the type of composition of age structure of population and its effect on economic growth and the concept of "demographic dividend" emerged.

d) Demographic Transition and Development in Nigeria

Demographic transition began in the 18th century in countries that are developed and still continues to date, but, in less developed countries, this demographic transition started later and is still at an earlier stage. However, some trends in communicable diseases, such as water borne bacteria, malaria, polio, HIV/AIDS and Ebola, have become the leading source of mortality in countries like Malawi, Sierra Leone, Liberia, Sudan and Nigeria. Rural Nigeria is experiencing stages two and three of demographic transition process. The feature of these two stages is that there is an increasingly rapid rise in population growth (population explosion) as the gap between deaths and births grow wider. The factors responsible for the population explosion in the rural areas is, first, improvement in the food supply by higher yields from modernized agricultural practices and government policies and better transportation of these agricultural yields. The second is the significant progress being made in public health and provision of primary health care centres in the rural areas for the reduction of under-five mortality and epidemic of communicable diseases, which entails the increasing survival of children and a growing population in the rural areas. These features of the demographic transition in the rural areas of Nigeria affect rural development positively.

With the increasing population in the rural areas, the age structure (15-24 years) of this population becomes increasingly active and moves to the working age population. However, the positive features of the demographic transition in rural Nigeria is reflected in the continued decline in childhood death as a result of parents realizing that they do not need many children so as to ensure a comfortable old age; and increasing urbanization that changes the traditional values placed upon fertility and the value of children in rural society,

that is, urban living, which increases the cost of dependent children to a family. Others are the introduction of compulsory and free education in the rural areas with the provision of free books for them; increasing female literacy and empowerment of women, which lowers the high rate of childbearing and motherhood as measures of the status of women; and substantial progress made in the availability of contraceptive and knowledge of how to use them. Also, there are the resulting changes in the age structure of the population of the rural areas, which include reduction in the youth dependency ratio and eventually population aging. In this period between the decline in youth dependency and rise in old age dependency, there is a demographic window of opportunity that can potentially produce economic growth through an increase in the ratio of working age to dependent population, hence the demographic dividend of the population of the rural areas in Nigeria.

e) Effects of Demographic Transition of Age Structure and Rural Development

The term development was used mainly in its economic sense until the last decade when it is used to imply the capacity of a national economy whose initial economic conditions has been more or less static for a long time to generate and sustain an annual increase of its gross national product at rates of, perhaps, 5% to 7% or more. In another connotation, development is the use of rates of growth of per capita Gross National Product (GNP) and this is supposed to take into consideration the ability of a nation to expand its output at a rate faster than the growth rate of its population. Development has also been conceived in terms of the planned alteration of the structure of production and employment so that agriculture's share of both declines, whereas that of the manufacturing and service industries increases (Torado, 1979). We cannot talk of development without talking of population growth. Population and development are inextricably linked.

However, there is no universally accepted definition of rural development. The term is used in different ways in vastly divergent contexts. As a concept, it connotes the overall development of rural areas with a view to improving the quality of life of the rural people. As a phenomenon, it is the result of various physical, technological, economic, socio-cultural, and institutional factors. As a discipline, it is multi-disciplinary in nature, representing an intersection of agricultural, social, behavioural and management sciences. It is also a process that aims at improving the standard of living of the people living in the rural areas. According to United States Department of Agriculture (2006), rural development is the improvement in overall rural community conditions, including economic and other qualities of life considerations, such as the environment, health, infrastructure, and housing.

Development has a goal of improving human dignity and human welfare. Population issues have been of concern to development for several thousands of years and, as such, the general concern was to stabilize the population to an optimum in terms of both the number and the quality of people. According to Morris (1967), as cited by Orubuloye and Oguntimehin (2000), population growth can be an impetus to development. For instance, increase in population can result in an increase in the total demand for goods and services, and the demand could be met by increased productivity. A growing population will permit a better division of labour, and the ratio of labour force to population would be improved. A growing population would afford economy of scale; and the growth of population will act as a challenge that will lead people to increase their efficiency.

However, there has been a relationship between population dynamics and the resources necessary to sustain human existence which has occupied an important position since the beginning of demographic studies. Although the Malthusian ideas have been heavily criticized because technological development has made increase in productivity possible, the problem of the discrepancy between population size and means of subsistence has, in recent years, taken a new dimension (Orubuloye and Oyeneye, 1983). The main concern has been the impact of population growth on the rate and level of development. There has been no agreement among the various countries in the world on the nature of the relationship between population and development. A lot of advanced capitalist countries and some of their scholars believed that developing countries will be unable to move out of the vicious cycle of poverty unless population growth is brought under control. Some of the developing countries especially those with socialist ideas, have insisted on pushing the population issue aside, objecting the fact that the economic exploitation and political domination by the developed countries are the reasons for their relative poverty. Some developing countries even believed that population growth should be encouraged as it is beneficial to the development process because of the advantages which are associated with population growth when it comes to peasant farming and income generation.

f) Importance of Population in Growing Economies

How exactly does population growth matter in developing economies? Or, how does each aspect of population growth fertility and family size, the proportion of children relative to working-age adults (expressed as the *youth dependency ratio*), human density and changes in aggregate economic demand affect the way societies manage productive assets and allocate the goods and services derived from them? Each single question deserves multiple answers, as a single answer

will not suffice. At one time or another, economists have suspected that population dynamics influence economic growth, employment and poverty, as well as the management of assets. The three principal categories of assets are *physical* (human-built infrastructure related to economic activity), *natural* (natural resources and the services they provide, including waste material and energy cycling), and *human* (health and educational status of citizens). In this section, we briefly summarize conclusions drawn from recent research related to each category of asset. Obviously, there is variation among countries, variation in the nature and quality of studies from which conclusions are drawn, and some uncertainty associated with each conclusion.

Unlike laboratory scientists, economists cannot conduct controlled experiments. Their work relies on surveys involving standard economic statistics and on expectations from the theories of their discipline. Based on this premise, economists try to identify patterns of behaviour over time and carryout comparisons between two or more blocs that shape their conclusions. Studies of a single country often produce valuable insights, but it can be hazardous to generalize by applying the lessons learned to other countries. The problem of generalization is solved where strong patterns of population-related impact emerge from multi-country comparisons. However, such patterns are hard to discern among variations in data quality, history, culture, geography and shocks related to political events or natural disasters. Where information is scarce or hard to measure, economists lean heavily on theory to guide them. The following statements briefly outlined what most economists researching demographic change presently accept to be relationships through which high fertility, population growth and increased human density relates to economic well-being in the developing world.

g) Failure of Past Efforts to Reduce Rapid Population Growth in Nigeria

The first serious efforts made by Nigeria to influence the population variables was in 1988 during the Buhari/Idiagbon administration known as "Nigeria Policy on Population for Unity, Progress and Self-Reliance" after the approval of the Armed Forces Ruling Council (AFRC). The policy was a proof of the then government's seriousness and concern about family planning as part of overall socio-economic development of the country; stressing the need for the policy (Federal Ministry of Health, 1985). In furtherance to getting this policy work out, a supporting policy was introduced in 2003 by Olusegun Obasanjo Administration to back it up called "Nigeria Policy on Population for Sustainable Development". These policies do not yield desired results as the rate of population growth in 1991 was put at 2.82 per cent and in 2006 at 3.02 per cent which attest to the fact that the policies have little or no influence on the people (Council of State, 2007). Despite the two policies, the Nigerian population is growing rapidly and the rate of growth in 2006 was higher than that of 1991. The policies have not achieved the stated aims and objectives as the population keeps on growing.

We see a lot of factors militating against the success and proper functioning of the population policy programmes. Ebigbola (1988) explained in his write-up that there are many socio-cultural and other constraints that militate against effective implementation of the population policy programmes in Nigeria.

The policy seem to be voluntary in nature yet 'couples will only be encouraged to have the number of children that they can adequately cater for, and that all couples have the basic right to decide freely and responsibly the number and the spacing of their children'.

There is also prevalence of polygamy more especially in the Northern part of Nigeria where Islamic injunction allows a man to marry many wives. The policy advocated four children per woman rather than four children per couple meaning that men are at liberty to have as many children as they wish.

We also see another impediment to this policy in the area of religious belief where Islam does not support the fixing of marriage age at 18 years or more. The adolescent age to them started earlier than the teenage age. Therefore, the programme cannot be implemented wholly or in part in the Muslim community of the North due to this belief.

Furthermore, there is a wide belief that the male children are the pillars of the family and object of perpetuation of the family lineage. Therefore, many families strife to have many male children irrespective of the number of female they have had.

More so, the policy was voluntary in nature and does not have a legal backing, no sanction against offender and there is no incentive for compliance.

The most serious impediment to this policy is the frequent change of government in Nigeria. Every government that comes on board wants to be the architect of a new policy; and for political reasons, there is no continuity in governance with any equal zeal to implementing the policy on the part of most successive governments (Ebigbola, 1988).

h) Implications of a Rapidly Growing Nigerian Population

Growing populations like that of Nigeria has many effects. Some of them are as explained below:

Growing population will create a large market for goods and services. Large population mean large demand for commodities and services. There will be high number of consumers. Demand for food, clothing and shelter will be on the increase. Moreover, demand for materials being used by children will also increase. It is a truism that a rapidly growing population will always

have a large number of children. According to 1991 population census of Nigeria, 45% of the total population falls into 0-14 year age group. Therefore, there will be an increasing demand for toys, children wear, etc. for this age bracket.

As explained above, a growing population will stimulate demand and change investment pattern. A large population of children means large production of materials needed by the children. Many producers will change their production pattern and shift to the production of children's goods. On the part of government, more schools will be built for children especially those of nursery and primary schools, with more recreational facilities, more health institutions that will treat them and give vaccines. An increasing population will increase the dependency ratio and workers will have more mouths to feed as more children or aged people are there to be catered for. Invariably, this will mean greater dependants on the working population. There will be social burden and economic liability on the working population. By implication, this means that the working population will have to meet their own needs and those of their dependants, leave meagre resources or nothing left out of the populace income. Hence, the nation will experience reduced savings leading to a lower rate of capital formation. This in turn will hamper the socio-economic development of the country. This situation is seen as one of the reasons why Nigeria is experiencing low capital formation and epileptic or very low socio-economic development.

Therefore, increase demand without corresponding increase in production will bring about high cost of living; where many people will be chasing too few goods and this will lead to upward movement of prices of commodities and services. Demand and prices of goods and services are constantly increasing in Nigeria due to population pressure and cost of living, more especially in the urban areas. Many people in Nigeria are seen to be spending a large percentage of their income on goods, services; especially on children upkeep in such areas as Lagos, Abuja and Port Harcourt for an example.

Another effect of a rapidly increasing population is the low level of income per head. The result of this is a lower standard of living or general fall in the standard of living of the people since consumption of goods and services per head is expected to be low. Low level of income per head can lead to consumption of sub-standard and inferior goods and can also cause a lot of people to live in ghetto or slump areas. Ghettos are considered to be fertile breeding places for contagious diseases and epidemics. This situation is considered to be the case in many places in Nigeria especially in Lagos area, and in many parts of the Northern Nigeria.

Besides, high and rapid population growth without corresponding social and economic growth will lead to inadequate social services and misuse of scarce resources due to heavy pressure on housing, educational facilities, roads, health facilities, water supply, etc. by the teeming population. In order to forestall incessant breakdown of these facilities and also to meet the increasing demand for them, the government will have to spend more money on provision of more facilities and on the repair and maintenance of existing ones. In Nigeria, there is an acute shortage of amenities in urban areas and sometimes the non-existent of same. There is frequent power failure or outages. Shortage of pipe born water and inadequate tertiary institutions are all considered to be reasons adduced to population pressure.

Despite the negative reasons advance against increasing population, it is crystal clear that increasing population will generate increasing manpower more especially in the long run. The children who are more in number today will later become the labour force tomorrow, thereby generates higher supply of labour. In Nigeria, the rapidly increasing population has in no doubt, generated rapidly growing supply of labour. 1991 Population Census revealed that 51.7% of the total population belonged to age group 15 - 64. The population Census of 2006 revealed greater percentage of this working class. Presently in Nigeria, there is a great number of people who are able, capable, willing and available for employment. It is sad to point out that there are no enough jobs to absorb this great and teeming labour force. The resultant effect is the high level of unemployment and poverty. Hence, there is low savings due to low income, high and growing number of dependants. The low savings will lead to low investment, which will inevitably, bring about inability to absorb growing number of labour force. Growth in population normally results to growth in population density especially in developing countries of the world. The average population density for the country in 1991 was 96 persons per km2. In some parts of Nigeria, population density is as high as 1,000 persons per square kilometre. For instance, the most densely populated states are Lagos (1,712 persons per sq. km), Anambra (534 persons per sq. km), Imo (438 persons per sq. km) and Akwalbom (389 persons per sq. km). These states are all in the southern part of the country. Kano State is the most densely populated in the northern part of the country, with a population density of 281 persons per sq. km (NPC, 1998).

X. Empirical Review

Aguirre (1999) stated that there are many researchers taking part in the population debate and they all have divergent approaches with different motivations. A working knowledge of the parties and their underlying philosophies will allow one to sift through the diverse rhetoric and hold then up to the light of scientific data. Frank Furedi, (1997) in his work on population and Development has provided a brief

outline of the variety of approaches to the issues of population. The Easterlin (1985) framework is often used to explain fertility levels in developing countries. Unlike other theories on population that draws solely from economics, Easterlin framework according to Macunovich (2000) is strengthened by its combination of the demand concept from economics and the supply concept on population from sociology. The argument is that declining infant mortality leads to an excess supply of children thus, decreasing the demand for children and motivating fertility regulation. This is relevant in Nigeria because infant mortality and other indicators of socio-economic development have made little progress since the recession of the 1980s. Caldwell's (1982) wealth flow theory of the expected social and economic returns to parents from their investment in children seems close to the current economic realities in Nigeria. The high cost of schooling, the dwindling financial support from government, and the increasing unemployment of university graduates may have created the context for the reversal of the wealth flow theory postulations (National research council, 1993).

Empirical studies which have used cross-country data to try and evaluate these claims, have however, found little evidence to support either argument. Once, the effects of initial income, education and other determinants of growth are taken into account, population growth is found to have a negligible effect on growth of GDP (Bloom and Freeman, 1986). This gave rise to the population neutralist or revisionist perspective, which held that demography, was not a significant factor in the economic growth process. This view was responsible for the tenuous position population variables have recently occupied in studies of economic growth.

The study by Eke (1966) is a simple statistical approach that attempted at estimating the de jure population of Nigeria for the period of 1952 to 1965. The aim of Eke's paper was to point out the inadequacy of official Nigeria census statistics, the general intellectual confusion and the diseconomies inherent in political approach to census taking.

The study by Tuny (1984) can be regarded as one of the most comprehensive studies on the relationship between population growth and economic development. This model, which utilized time-series data from Taiwan, comprised about one hundred and fifteen equations and identities. The results obtained from the simulation showed that in the short run, a reduced rate of population growth would bring about a higher rate of per capital income. However, it must be noted that these results did not consider the impact of migration especially, from the rural and the urban areas.

Ogujiliba (2005) attempted to quantify and examine how changes in population dynamics affect household portfolio choices (expenditure on food, monetary transactions, goods and services and non-cash expenditure) in Nigeria given the fact that Nigeria is going through a demographic transition. Previous efforts to assess impacts of population growth have ignored the household expenditure response which has been far from being definitive on the transmission net effects on household portfolio choices. This study focuses on Nigeria with the aim of overcoming these defects and obtaining reliable information. The study established a link between demographic variables and household expenditure components using the Vector Error Correlation Method. Next the estimated equations are used to project the pattern of the different components of expenditure income based on three population scenarios generated from different assumptions on changes in fertility. The results suggest that population growth in Nigeria can produce significant effects on the economy via the expenditure profiles of households. The results also suggest that other factors such as real per capital income, ratio of other expenditure categories to total expenditure influences growth of household expenditure components.

Oladosu (2001) posits that the prospects for fertility decline in Nigeria are bright as noticeable trends in the use of contraceptives between 1990 and 1999 increased. The proportion of women who had births in the five years declined. Some women in Nigeria thought that they have the same or equal reproductive goals as their husbands as regards deciding how many children the family should have. These are favourable indicators for future decline. In addition, young women who are gainfully employed in white collar jobs and work away from home are more likely to use contraceptive drugs and they are more likely not to have frequent births in three to five years of early employment. Young women who married at later ages are likely not to have early births, thereby reducing the number of births.

Shavazi and Jones (2001) carried out a study on population dynamics and characteristics among Muslim population to aid deeper understanding of the Muslim world having defined Muslim-majority countries and countries with large Muslim populations. The study explained demographic, social and economic characteristics of Muslim populations, and also, analyses demographic transition in the Muslim world. In a similar study carried out in Muslim majority countries by Makinwa and Adebusoye (1991) analysed the adolescent reproductive behaviour in Nigeria using five cities which are Enugu, Kaduna, Jos, Onitsha and Zaria as a case study. The findings indicated that the lives of a large segment of Nigeria's youth may be in jeopardy in many ways from early unguarded sexual promiscuity resulting in unwanted pregnancies, disruption of education and illegally induced abortions.

XI. Summary of Literature Review

Growing population will create a large market for goods and services. So, a large population means

large demand for commodities and services implying that a high number of consumers will stimulate demand for food, clothing and shelter. Moreover, demand for children wears and toy materials etc. for children will also increase as a rapidly growing population will always have a large number of children. The 1991 population census of Nigeria, gave the figure of children from 0-14 years age group as 45% of the total population. Therefore, there will be stimulating increase in demand for toys, children wear, etc.

As explained above, a growing population will stimulate demand and change investment pattern. An increasing population will increase dependency ratio and workers will have more mouths to feed as more children or aged people are there to be catered for. There will be greater dependants on the working population. There will be social burden and economic liability on the working population. This will be reduction in savings which inversely shows a lower rate of capital formation paradoxically. This in turn seems to hamper the socio-economic development of the LGA which in turn have its toll on the economy both positively and negatively. This is said to be one of the reasons why Nigeria is experiencing low capital formation and epileptic or very low socio-economic development. However, one may ask whether this assertion be true, calls for a study of the rural economy.

However, increase demand without a corresponding increase in production will bring about high cost of living. Many people will be chasing few goods and this will lead to upward movement of prices of commodities and services. Of a note, demand and price are constantly increasing in Nigeria due to population pressure and cost of living as is experienced especially in the urban areas.

A common effect of a rapidly increasing population is the enthronement of low level of income per head as a result of fewer income or resources per head. The result of this is the lowering standard of living or the general fall in the standard of living of the people in that geographical enclave. The consumption of goods and services per head will therefore be low as is usually asserted by Scholars in the literature.

XII. Method of Study

This study of primary data obtained from field study and was guided by postulated research questions as spelt out hereunder. The research design refers to the overall strategy by choosing to integrate the different components of the study in a coherent and logical way which constitutes the blueprint for the collection, measurement, and analysis of data. The study adopts a cross sectional survey design which allows the researcher to examine the study variables as they exist in the population using a representative sample without having to manipulate the variables or administer some sort of treatment to induce the observed influence.

a) Model Specification

This study adopts a Chi-Square model as shown below:

$$\chi^2 = \sum\sum \frac{(\boldsymbol{O}-\boldsymbol{E})^2}{\boldsymbol{E}} \sim \chi^2_{\alpha;(r-1)(c-1)}$$

Where O is the Observed Frequency
E is the Expected frequency

b) Population/Sample Determination

The population of this study comprises the people of Ogu/Bolo local government area of Rivers State who are adults from the age of 18 and above. Ogu/Bolo local government has a total population of 74,683 people living in the communities (NPC, 2006). The sample size for the study consists of 398 adult residence of the community. This sample size was drawn from the population using Taro Yamane sample size determination formula as given below;

$$n = \frac{N}{1+Ne^2}$$

Where:

n = Sample size to be determined
N = Finite population
1 = Constant
e = Level of significance taken to be 0.05.

The sample size can be derived thus:

$$n = \frac{74683}{1+74683\times.05^2} = \frac{74684}{187.71} \cong 398$$

c) Sources of Data

The data for this study was purely primary data since it requires the perception of the people in the study community. This data was obtained through the use of questionnaire which was constructed by the researchers to meet the objectives of the study.

d) Instrument for Data Collection/Method

Questionnaire was used as the instrument for data collection since it is a primary work. The questionnaires consist of two sections; the first section contains questions seeking the socio-demographic information of the respondents while the second section concerns items that provide information to address the objectives of the study.

All the 398 copies of the questionnaire were personally administered by the researchers in the major communities of the study local government area. The questionnaire was randomly administration on the adult residents of the communities. Copies of the completed questionnaires were returned on the spot to increase the return rate and avoid loss. There were some incidences where the questionnaires were not filled immediately and some were lost.

e) Method of Data Analysis

Chi-Square statistical tool is used to analyse the results. The decision rule was to reject the null hypothesis if the calculated Chi-Square value is greater than the critical value at .05 level of significant at an appropriate degree of freedom and accept the alternate hypothesis.

XIII. Data Presentation and Analysis of Results

In the analysis of the data collected for the study. Out of the 398 copies of the questionnaire administered, 377 copies were correctly filled and returned, giving a return rate of 94.7%. The criterion mean point of 2.5, that is

$$\left\{ 4+3+2+1/4 = 10/4 = 2.5 \right\}$$

was used to decide whether the respondents agreed or disagreed to the items in Tables 5 to 7. Any item with the mean response of 2.5 and above was considered 'agreed' and below 'disagreed

a) Presentation of Data

Table 1: Data Presentation on Gender Respondents

Gender	Frequency	Percent
Male	180	47.7
Female	197	52.3
Total	377	100

In Table 1 above, the result shows that male respondents were 180 representing47.7 percent of total number of respondents and female were 197(52.3%).

Table 2: Data Presentation on Age

Age	Frequency	Percent
18-27	52	13.8
28-37	94	25.0
38-47	184	48.8
48 and above	47	12.4
Total	377	100

In Table 2, 13.8% respondents (being 52) were in the age bracket of age 18 to 27;25% respondents (being 94) were between the ages of 28 and 37;while 184 being 48.8% respondents were in the age bracket of 38 and 47,and 12.4% respondents (being 47) were in the range of 48 years and above.

Table 3: Data Presentation on Marital Status

Marital Status	Frequency	Percent
Single	71	18.8
Married	284	57.3
Divorced	3	0.8
Widowed	19	23.1
Total	377	100

Majority of the respondents numbering 284 representing 57.3 percent of the total respondents were married; 71 representing 18.8% of the respondents were single; 3 people representing 0.8% of the respondents were divorced while widowed were 19 representing 23.1% of the respondents.

Table 4: Data Presentation on Educational Qualification

Qualification	Frequency	Percent
FSLC	26	6.9
SSCE	77	20.4
OND/Diploma	62	16.4
HND/BSc	195	51.7
Higher Degrees	17	4.6
Total	377	100

The result as presented in Table 4 shows that the majority of the respondents numbering 195(51.7%) were HND/B.Sc. holders; 26(6.9%) respondents had only FSLC; 77(20.4%) respondents were SSCE holders; and 62 (16.4%) respondents had Diploma/OND, while 17 (4.6%) respondents had a post graduate degree.

Table 5: Population Growth and Socio-Economic Life of Ogu/Bolo People

S/N	Items	SA	A	D	SD	Mean	Decision
1	The high population makes Ogu/Bolo people very industrious.	98	181	54	44	2.88	A
2	A lot of the people in the community are self-employed.	113	159	74	31	2.94	A
3	Many people settle here in the community from other areas of the country for business.	77	142	86	72	2.59	A
4	Most of the economic activities of the people in the area take place in water.	91	125	82	79	2.60	A
5	Ogu/Bolo is a densely populated community and this promotes all kinds of trade.	118	164	43	52	2.92	A

A=Agreed, D=Disagreed

The result in Table 5 shows that the respondents agreed to all the items concerning the population growth and socio-economic life of Ogu/Bolo people.

Table 6: Population Growth and Socio-Economic Resources of Ogu/Bolo People

S/N	Items	SA	A	D	SD	Mean	Decision
1	There is a lot of fishing activities in the community due to high population	88	177	51	61	2.77	A
2	Population growth in Ogu/Bolo promotes farming activities.	49	107	164	57	2.39	D
3	Ogu/Bolo has a fertile land for farming which attracts people from other parts of the country	153	115	51	58	2.96	A
4	There are a lot of rivers/seas in the community that promoting fishing activities	121	142	81	33	2.93	A
5	There are majority foreigners doing business in the local government	46	166	87	78	2.48	D

A=Agreed, D=Disagreed

Table 7: Population Growth and Standard of Living of Ogu/Bolo People

S/N	Items	SA	A	D	SD	Mean	Decision
1	Standard of living of the people in the community is above average.	92	149	111	25	2.82	A
2	I am satisfied with my current standard of living.	61	83	152	81	2.33	D
3	Even with the high population most people in the community are living in their private house.	113	101	96	67	2.69	A
4	The work force in the community is boosted by population growth.	69	168	117	23	2.75	A
5	My monthly income is above ₦50,000	165	119	71	22	3.13	A

A=Agreed, D=Disagreed

b) Data Analysis

Hypothesis One: Population growth has no significant effect on socio-economic life of the people of Ogu/Bolo Local Government area of Rivers State.

Table 8: Chi-Square Analysis of the Effect of Population Growth on the Socio-Economic Life of the People

ITEM	FREQUENCY								$\sum \frac{(O-E)^2}{E}$
	O	E	O	E	O	E	O	E	
The high population makes Ogu/Bolo people very industrious	98	99.4	181	154.2	54	67.8	44	55.6	9.91
A lot of the people in the community are self-employed.	113	99.4	159	154.2	74	67.8	31	55.6	13.46
Many people settle here in the community from other areas of the country for business.	77	99.4	142	154.2	86	67.8	72	55.6	15.74
Most of the economic activities of the people in the area take place in water.	91	99.4	125	154.2	82	67.8	79	55.6	19.06
Ogu/Bolo is a densely populated community and this promotes all kinds of trade.	118	99.4	164	154.2	43	67.8	52	55.6	13.41
Total									71.57

O=Observed Frequency, E=Expected Frequency

$$\chi^2 = \sum\sum \frac{(O-E)^2}{E} = 71.57$$

Degrees of freedom (df) for contingency Chi-Square is given as;

$$df = (R-1)(C-1) = (5-1)(4-1) = 4 \times 3 = 12$$

Where R= number of rows and C= number of columns
Chi-Square critical $= \chi^2_{\alpha;(r-1)(c-1)} = \chi^2_{.05,12} = 21.03$

Since $\chi^2_{calculated} = 71.57 > \chi^2_{critical} = 21.03$, the null hypothesis was rejected. Therefore, there was a statistically significant effect of population growth on socio-economic life of the people of Ogu/Bolo Local Government area in Rivers State of Nigeria.

Hypothesis Two: There is no comparative advantage of population growth and socio-economic resources available to the people of Ogu/Bolo Local Government area in Rivers State of Nigeria.

Table 9: Chi-Square Analysis of the Effect of Population Growth on the Socio-Economic Resources Available to the People

ITEM	FREQUENCY								$\sum \frac{(O-E)^2}{E}$
	O	E	O	E	O	E	O	E	
There is a lot of fishing activities in the community due to high population	88	91.4	177	141.4	51	86.8	61	57.4	24.08
Population growth in Ogu/Bolo promotes farming activities	49	91.4	107	141.4	164	86.8	57	57.4	96.70
Ogu/Bolo has a fertile land for farming which attracts people from other parts of the country	153	91.4	115	141.4	51	86.8	58	57.4	61.22
There are a lot of rivers/seas in the community that promoting fishing activities	121	91.4	142	141.4	81	86.8	33	57.4	20.35
There are majority foreigners doing business in the local government	46	91.4	166	141.4	87	86.8	78	57.4	34.22
Total									263.57

O=Observed Frequency, E=Expected Frequency

$$\chi^2 = \sum\sum \frac{(O-E)^2}{E} = 263.57$$

Degrees of freedom (df) for contingency Chi-Square is given as;

$$df = (R-1)(C-1) = (5-1)(4-1) = 4 \times 3 = 12$$

Where R= number of rows and C= number of columns

Chi-Square critical $= \chi^2_{a;(r-1)(c-1)} = \chi^2_{.05,12} = 21.03$

Since $\chi^2_{calculated} = 263.57 > \chi^2_{critical} = 21.03$, the null hypothesis was rejected. Hence, there was a significant comparative advantage of population growth and socio-economic resources available to the people of Ogu/Bolo Local Government area in Rivers State of Nigeria.

Hypothesis Three: The standard of living of the people has no significant relationship with the high population growth rate in Ogu/Bolo Local Government Area in Rivers State of Nigeria.

Table 10: Chi-Square Analysis of the Relationship between Standard of Living and Population Growth

ITEM	FREQUENCY								$\sum \frac{(O-E)^2}{E}$
	O	E	O	E	O	E	O	E	
Standard of living of the people in the community is above average	92	100	149	124	111	109.4	25	43.6	13.64
I am satisfied with my current standard of living	61	100	83	124	152	109.4	81	43.6	77.44
With the high population most people in the community are living in their private houses.	113	100	101	124	96	109.4	67	43.6	20.16
The work force in the community is boosted by population growth.	69	100	168	124	117	109.4	23	43.6	35.48
My monthly income is above ₦50,000	165	100	119	124	71	109.4	22	43.6	66.63
Total									213.35

O=Observed Frequency, E=Expected Frequency

$$\chi^2 = \sum\sum \frac{(O-E)^2}{E} = 213.35$$

Degrees of freedom (df) for contingency Chi-Square is given as;

$$df = (R-1)(C-1) = (5-1)(4-1) = 4 \times 3 = 12$$

Where R= number of rows and C= number of columns

Chi-Square critical $= \chi^2_{a;(r-1)(c-1)} = \chi^2_{.05,12} = 21.03$

Since $\chi^2_{calculated} = 213.35 > \chi^2_{critical} = 21.03$, the null hypothesis was rejected. Therefore, there was a significant relationship between standard of living of the people and high population growth rate in Ogu/Bolo Local Government Area in Rivers State of Nigeria.

XIV. Discussion of Findings

The first hypothesis stated that there will be no significant effect of population growth on the socio-

economic life of the people of Ogu/Bolo L.G.A in Rivers State of Nigeria. The findings of the study revealed that the calculated Chi-square value of 71.57 and the critical value 21.03 at .05 level of significance with 12 degrees of freedom led to the rejection of the null hypothesis, implying that population growth had a significant effect on socio-economic life of the people. It further showed that population growth contributed positively to the socio-economic life of the people. This finding agrees with that of Nwusu, *et al*., (2014) which found a significant effect of population growth on the economic growth of Nigeria. The finding also goes in line with the position of Coale& Hooker (2007) that population growth stimulates business and generates economic growth cycles and therefore necessary for development.

The second hypothesis assumed that there will be no comparative advantage of population growth and socio-economic resources available to the people of Ogu/Bolo L.G.A in Rivers State. The test was carried out using Chi-Square statistics and the findings revealed that the Chi-square calculated value of 263.57 and the critical value of 21.03 implying that there was a significant effect of population growth on socio-economic resources available to the people which led to the rejection of the null hypothesis. This result shows that there was a comparative advantage of population growth and socio-economic resources available to the people. This finding contradicts the study of Ude (1991) which the researcher argued that the population growth rate in Nigeria is faster than the rate of food production and general agricultural output; as such there is a very little resource for many people to compete for, which has made Nigeria a place for survival of the fittest. He seemed to forgot that "Demand creates its own Supply" and on the other hand, "Supply creates its own Demand".

In the third hypothesis, it was assumed that there will be no significant relationship between the standard of living of the people and the high population growth in Ogu/Bolo L.G.A of Rivers State. The finding revealed a significant relationship between the two variables and this led to the rejection of the null hypothesis. The finding contradicts the position of Agbodike (1992) that rapid population growth as it is experienced in Nigeria leads to a rise in food price causing inflation which threatens the living standard of many people in the country. This implies that the rising population in Nigeria leads to increased unemployment rate which affects the standard of living and development negatively. The findings, however, goes in line with the study by Nwosu, *etal*. (2014) which they asserted that high population mean a good work force which translates to the economic growth and development of a nation.

XV. Summary

This work centres on reviewing the socio-economic effects of Population Growth of the people of Ogu in Ogu/Bolo Local Government Area of Rivers State by taking a critical look on the various concepts that borders on the population of the life of the people.

The work made use of theories to back up the concept behind the rationale and by reviewing certain empirical literature. Three variables were prompt to have shown impact of population on the people.

The findings of this work, reveals in the first hypothesis that the regression coefficient of 0.9255 and the probability value of 0.000 led to the rejection of the null hypothesis, implying that population growth in Ogu/Bolo had a significant effect on socio-economic life of the people. It further showed that population growth contributed positively to the socio-economic life of the people. Therefore, population growth is a welcome idea and should be encouraged.

The second hypothesis assumed that there will be no comparative advantage of population growth and socio-economic resources available to the people of Ogu/Bolo L.G.A of Rivers State. The test was carried out using simple regression analysis via ordinary least squares method and findings revealed that there was a significant effect of population growth on socio-economic resources available to the people which led to the rejection of the null hypothesis. This implies that there is a comparative advantage of population growth and socio-economic resources available to the people. The coefficient of population growth was found to be 0.8678 which implies that a unit increase in population will have 0.8678 unit or 87% increase in the socio-economic resources available to the people. This further implies that population growth had a positive impact on the socio-economic resources of the people and should therefore be encouraged.

In the third hypothesis, it was assumed that there will be no significant relationship between the standard of living of the people and the high population growth in Ogu/Bolo L.G.A of Rivers State. The finding revealed that a significant relationship between the two variables exists and this led to the rejection of the null hypothesis.

XVI. Conclusion

The population of Nigeria has an in-built potential for rapid growth through natural increase, which replicate itself in Ogu/Bolo Local Government Area which population is growing rapidly and efforts should be made by governments or the local people to make all concerted efforts in improving their socio-economic life or else the explanation of Rev. Thomas Malthus saying that an increasing population without corresponding increase in the means of subsistence will breed poverty, diseases, unemployment and other

social ills come true. The governmental authorities (federal or state or local government) need to design intervention programmes that will help in checking population growth and/or stimulate socio-economic development. Government of Rivers State should create enabling environment that will facilitate savings, investment, innovation, entrepreneurship and technical know-how to better the lot of the people.

XVII. Recommendations

Based on the findings of this work, the researchers however make the following recommendations:

There should be a reform of local government statutes or bye-laws. Most local governments in Nigeria, has not been exercising the authority and responsibilities that should supposedly to be given them by local government laws were not explicit enough and the existing laws are out of date and offer little flexibility. Currently, many small rural government units are experiencing fiscal crises, and should be given enough funds to them as Local Government Authorities to execute or provide the most basic infrastructures, such as roads and portable drinking water. Centralizing even this simple function at the federal level is not helping matters. All aspects of local revenues and expenditures such as Local tax authority, Local Schools Board financing, Local Land Use & Controls, Regulation of Business and Industry should be re-evaluated to make them effective and efficient. Let these laws and bye-laws be up-to-date.

There should be specific policy statement on educating the people of Ogu/Bolo Local Government Authority Area. People of Ogu/Bolo LGA should demand more local policy control as each constituency is distinct one from another.

At least one industry should be cited in each Local Government in the nation to empower the people and create employment for the rural populace. The people should be taught on the need for self-sustainability and cultivate the habit of thrift spending. Perhaps there has never been a more important time for land grant to social scientists to assist community residents. Policy decision makers at the local government level should understand the impact of economic, social and policy changes in particular rural community and set up social amenities or provide basic infrastructure to bring rural transformation and development as well as solve the urban-city-drift/migration.

Prospective investors in the country or beyond should invest in the areas of agriculture, housing, purchasing, marketing, distribution of essential commodities, transportation, manufacturing, funding of small scale industries and scientific inventions in these rural urban communities of which Ogu/Bolo LGA is highly recommended being a fertile ground for investment with political tranquillity. Rivers State Government or the Federal Government should design intervention programmes that will help in reducing population growth rate in the rural areas and stimulate socio-economic development. Enabling environment that will facilitate savings, investment, innovation, entrepreneurship and development of technical know-how to better the lot of the people be created.

There should be technical assistance to all urban communities to help solve urbanization problems and crimes. The demand is already great for understanding the "community consequences" of policy alternatives or of particular economic development strategy. Land grant to scientists can play a key role in improving and extending the capacity of local groups to understand their options and make more informed scientific decisions.

It was however recommended that, there should be a reform of local government statutes to help ameliorate the problems and challenges of the indigenous people of Ogu Urban Town and that of the entire rural populace of Nigeria and other rural communities in the world.

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Towards Affordable Low Cost Housing: Strategies of Low Cost Housing Development for the Low Income Population in Rwanda

By Jean Bosco Harelimana

Abstract- The issue of affordable housing remains to be interested to the researchers all-over the world. Like elsewhere, in Rwanda the modern technology is being used in housing building towards more affordable house low cost. However, the constraints to obtain affordable houses are still experiencing on Rwanda market and can be regarded as financial, cultural, social, historical and institution framework. The high cost of capital, the high price to rent and to own affordable houses remains to be the main challenge for younger professionals and new tenants. On other side, high loan and mortgage interest rates hindering ownership of affordable houses for the middle and low income household sectors. As illustrated under section of discussions, consumer attitude/culture and level of income are the main factors towards affordable house. However, the Rwandan government may attract foreign investors such United Nations agencies, development banks, international NGOs, public and private partnership, World Bank and derivatives in their program to fund affordable housing in order to reduce the cost of capital and make it easier for all categories towards affordable housing.

Keywords: affordable housing, finance, strategies, challenges, low cost housing.

GJMBR-B Classification: JEL Code: G00

Strictly as per the compliance and regulations of:

Towards Affordable Low Cost Housing: Strategies of Low Cost Housing Development for the Low Income Population in Rwanda

Jean Bosco Harelimana

Abstract- The issue of affordable housing remains to be interested to the researchers all-over the world. Like elsewhere, in Rwanda the modern technology is being used in housing building towards more affordable house low cost. However, the constraints to obtain affordable houses are still experiencing on Rwanda market and can be regarded as financial, cultural, social, historical and institution framework. The high cost of capital, the high price to rent and to own affordable houses remains to be the main challenge for younger professionals and new tenants. On other side, high loan and mortgage interest rates hindering ownership of affordable houses for the middle and low income household sectors. As illustrated under section of discussions, consumer attitude/culture and level of income are the main factors towards affordable house. However, the Rwandan government may attract foreign investors such United Nations agencies, development banks, international NGOs, public and private partnership, World Bank and derivatives in their program to fund affordable housing in order to reduce the cost of capital and make it easier for all categories towards affordable housing.

Keywords: affordable housing, finance, strategies, challenges, low cost housing.

I. Introduction

When it comes to the health and vitality of our communities, affordable housing is the key. The need for quality, affordable homes is an important part of Sustainable Development Goals and the Rwandan vision 2050 as it seeks to evolve into a sustainable community. With the economic issues the world is facing the demand for affordability is greater than ever before (Nabutola, 2014).The issue of housing affordability is becoming a more concern for several researchers in many worlds in Africa as well as in Rwanda [Wallbaum et al., 2012, Nabutola 2014, Mohit et al., 2010, Yates et al., 2012, Baqutaya, 2016]. The poor management of the growth of housing cost has been affecting negatively any African society in terms of finance. Therefore, reducing the effect of housing issues could be a potential benefit to both low and middle income households. According to Parrillo (2015), one of the social problems includes housing where it brings issues due to various social, economic and cultural implications. As seen above, the matter of housing issue is threatening low and middle income society (Sheldon, 2007). In these circumstances the housing issue is one of the most disturbing structural and functional social problems, with certain cultural aspect (Zamfir, 2016).This has been becoming a constraint for some middle-income groups, whereas it had previously mainly been an issue for those on lower incomes.

Thus, the aim of this paper is to identify the actual challenges and way forward related to the affordable and low cost housing. Based on secondary data from previous studies, this study measures different issues namely loan availability, housing affordability, housing scheme's policy, consumer attitude, neighborhoods, housing quality, economic development. Therefore, it is hoped that the results and discussion of this paper would help to instill more understanding of the real issue related to housing. Because proper knowledge in identifying the main issue of affordable housing can assist the government of Rwanda and stakeholders to handle and effectively resolve these issues, which might affect the citizen as well as the whole county health. Indeed, it clear that though may require more effort from both public and private sectors but working together could lead to low cost affordable housing. For instance, government should provide grants as subsidiaries to soften high loans and mortgage interest rate which would encourage actors to borrow money and invest in affordable housing on low cost.

II. Literature Review

The modern technology has been involved in housing building towards more affordable house low cost. For instance Antje (2007) argued that compressed earth block technology along with using simple materials and simple construction technique have offered the people in Rwanda the ability to construct a simple, efficient and cost-effective house. This simple house has more advantages of a concrete block construction without the cost. Furthermore, CBC (2009) added that low cost materials are locally available, affordable and therefore, because of innovation and technology the poor families who constitute high portion of population can afford low cost houses.

Author: Institute d'Enseignement Superieur de Ruhengeri Musanze, Rwanda, P.O.B. 155 Musanze. e-mail: harelijordan@yahoo.fr

Indeed, most architects have received some training in design solution for building and construction that use conventional approaches, including low incoming project.

a) Actors and practices of low cost building materials and technologies

More research and development have been conducted for low cost building materials and technologies all over the world by involvement of many organisations both national and international, as well as non-governmental organisations.

The general speaking here was to lowering construction costs, especially in regard to housing in order to make it affordable to more people who predominantly in the low income households(Nabutola 2014 & Mohit et al., 2010).

b) Challenges in the provision of affordable housing in Rwanda

The main constraint to obtain affordable houses can be regarded as financial, social and institution framework (Yetgin & Lepkova, 2007). The financial factors tackle middle economy in the country, high cost of infrastructures, low level investments, difficulties in accessing financial resources and escalating cost of building materials. All these factors illustrated above make it tough for poor and middle class to afford house. The challenges do not only include financial factors but also social factors such as population explosion, rapid-rural to urban migration and high poverty levels. As cited by Daniel (2009), institutional frameworks including housing policies in place have failed to help a conclusive environment for investment in affordable housing. Indeed, the land in urban areas in Rwanda has been raised in recent years. The speedy influx of people to the urban areas has generated high demand for land causing prices in residential areas to increase so fast.

In order to identify the key challenges in the provision of affordable housing in Rwanda the study will consider the key aspects involved in the provision of affordable housing, as discussed below:

i. *Land*

In urban areas, land has been highly valued and is mostly in hands of the central government and the local authorities. The other landowners are speculators who looking to make a quick cash.

This has made land inaccessible to the more people including poor and middle class who need it most but cannot afford premium price. Indeed, according to Nabutola (2014) the high demand of land with competing interest groups and individuals has pushed prices up.

ii. *Infrastructure*

The opening of new land for housing development or the improvement of current information settlements require installation and maintenance of infrastructures like water, road, electricity and security (Smith, 2006). These infrastructure facilities provide crucial component of shelter provision. Indeed, accessibility to sufficient urban basic services will crucially improve people's economic capacities, heath and quality of life in general. In other hand, Bonyo (2010) suggested that lack of trunk infrastructure hindering housing development to the low income sector.

iii. *Financial resources for housing*

The financial bottle neck is a major limitation factor in housing development. The sources of funds are few and the funds are on high price. Getting qualified for mortgages are still too severe despite the fact that housing is still in short supply. Renaud (1997) estimated that Inappropriate fiscal policies on real estate financing, inability to finance house loans to groups, low affordability due to poverty, high interest rates on mortgages, absence of graduated payments of mortgages and lack of access to the large deposits of retirement benefit funds have hindered the development of the housing sector.

The financial set up in the housing market in Rwanda as indeed elsewhere is such that those offering funding seek to make a profit and declare dividends for the shareholders because that is what they are in business for. The money market is expensive due to relatively higher risks that raise interest rates.

iv. *Public-private partnership in housing delivery*

The common objective of public-private partnership in housing delivery is to boost the productivity of housing sector, increasing housing affordability and improve access to basic infrastructure. Ikekpeazu (2004) mentioned that in order to achieve the desired output of public-private partnership, the discernment of the housing sector as a vast arena of social problems and a drain on the economy must change. Housing must be considered as significant economic sector with vital linkages to the overall economy of a country.

v. *Investment in affordable housing supports multiple social objectives*

The evidence shows that investment in affordable housing supports multiple social objectives. This includes improvements to individual outcomes such as employability, crime, health and wellbeing and community cohesion. It is particularly important to assess the socio-economic impact of building affordable homes in light of the large set of households where demand for affordable homes cannot currently be met (Mohit et al., 2010.

Indeed, this wide set of desirable socio-economic outcomes cannot be achieved through Housing Benefit or other operating expenditure on affordable housing alone. This is because many of these benefits are the result of affordable housing being better able to meet tenants' needs than alternatives such as

housing in the private rented sector. Therefore public investment in affordable housing is vital (Nabutola 2014).

As result of investing in affordable housing, it will generate more opportunities for both actors and tenants. For instance, more unemployed people can get job opportunities and tenants could benefit from poorly insulated private sector home to a good quality, insulated affordable home would be less at risk of suffering from hygienic diseases and therefore, could save household expenditure that would be spent on those diseases.

III. Methodology

The study has used primary and secondary data affordable and low cost housing measurements that collected from previous studies. Affordable housing and its trends were illustrated in details through critical review of literature. This study focused on the different criteria for affordable and low cost housing assessment. The same study arranged these criteria that indirectly impact affordable housing by examining each of their functions.

IV. Results and Discussions

As depicted above, this study discussed some affordable housing trends using primary and secondary data filtered from previous studies. Different criteria have been discussed in depth in order to provide significant overview about affordable housing.

a) Strategies in place of driving to words low cost affordable housing

The proposed strategies will be vehicles to enable affordable housing providers to access lower cost debt for longer terms unlocking desperately needed "fit-for-purpose" funding into the sector in Rwanda.

To access the lower cost capital it requires the government, private sector, institutional investors and non-profit organizations to work together in new and collaborative ways.

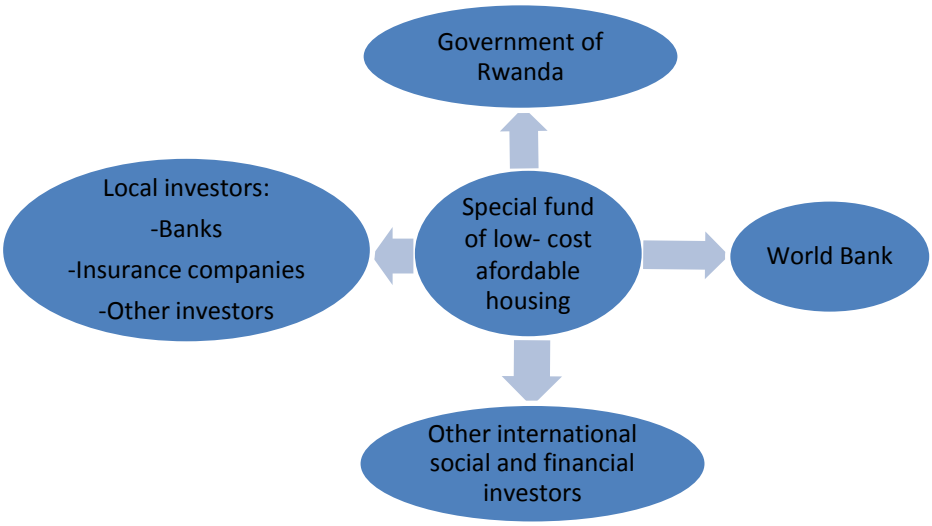

Fig. 1: Low cost affordable housing Model

This model is a viable solution that, with Government support and institution investors in the line of Public Private Partnership could greatly contribute to increasing the stock of affordable housing across the country. The model would allow housing providers to access funding at lower interest rates and for longer terms. The benefits of this financial model include:

1. Housing providers would have access to capital which is more fit-for-purpose, that is over longer term (of 15-25 years) and on lower cost terms.
2. Institutional investors will have a financing vehicle to achieve long term secure and stable returns as part of their portfolio whilst also supporting the affordable housing. The fund would have investment characteristics such as a Government-backed credit rating with appropriate risk adjusted returns that are similar to other asset classes that institutional investors are familiar with.

b) Possible ways of achieving low cost and affordable housing in Rwanda

This section offers a set of strategies that can be used in Rwanda to increase affordability while maintaining commercial viability. These strategies are not a formula, but suggested ingredients that we expect will improve the chances of success.

Strategy 1: Using simple materials and simple construction techniques

Currently, in Rwanda, some Actors are using simple materials and simple construction techniques to afford low cost houses. Indeed, with compressed earth block technology, people can construct a simple, efficient, cost-effective house as it shown below:

Picture 1: Low cost affordable house of 18 Million Rwandan francs

This house will have all the advantages of concrete block construction without the costs. To achieve good results, however, some new construction techniques have been learned and simple machines and some tools are used to compress blocks.

Table 1: List of tools used to compress blocks

• Shovels • Picks • Watering can • Oil • Sieve	• Wire • Pliers • Rubber gloves • Metal saw • String	• Wheelbarrow • Calculator • Chisels • Trowels • Surveyors level	• Eye protection • Carpenter square • Measuring tape • Wood Saw • Block press Hammers

Source

Picture 2: Tools to presses blocks in local raw materials

There are many different types of block presses. Some are manually operated and others are powered with electricity or petroleum. Manual presses are operated by semi-skilled workers, whereas powered machines need more skilled operators and are more expensive to run.

Picture 3: Manual presses machine

Picture 4: Electrical presses machine

Bricks are either square or flat faced and they may interlock. This Interlocking blocks offer an advantage of requiring less (or no) mortar in joint of blocks. Square blocks are more versatile for making curves or intersection walls, as are conventional bricks.

However, In case no machine is available, a simple compressed earth block is produced with the help of a mold and a tool to ram the earth into the mold. If an appropriate mix is used and the bricks are well mixed and uniformly compressed, better strength is achieved than using traditional molding techniques. However this technique is not consistent and does not achieve the same results as a machine press. Furthermore, this method has some downside of being very slow and only producing flat faced as shown in the picture below:

Picture 5: Priced out; the challenges for young professionals

The affordability issue continues to be a serious problem for people who keep the Kigali and other cities running such as cleaners and students and other people with low income jobs. But it's also becoming a problem further up the income scale. House prices in Kigali rose by 47% between 2012 and 2016 compared to 24% in other cities like Musanze, Gisenyi, Muhanga, Rwamagana and Huye.

As extracted by EWB (2016) average rents increased by 22% in Kigali and 15% in other cities over the same period. However, over the same period wages have failed to rise at significant level, with increases by only 7%. Considering the average earning and comparing it to average rents, the analysis of this study shows that only few boroughs are affordable for people with middle and low income who renting a one-bedroom house with medium standards especial in Kigali.

Strategy 2: Make land affordable

Land is so expensive in urban Kigali that it alone can make affordable housing unviable. Additionally, banks in Rwanda are reluctant to finance the purchase of land. Therefore creative methods often need to be used to secure land in a way that makes sense for the project. Below are a few possibilities:

1. *Land as equity:* Find a land partner who can come in with the land as equity. This means eventually paying for the land in the form of dividends, which may align nicely with cash flows since revenue comes in first and the whole payment does not need to be made at once.
2. *Concessionary land:* Find an organization or government agency with an interest in low cost housing and receive the land at a concessionary rate. This is currently happening in Rwanda on land that belongs to RSSB. A low-income housing development is being planned on their land, enabling the project to have much more flexibility with pricing than is typical because the land is free. This same scenario could be replicated on government land or land belonging to individual owners with an interest in affordable housing.
3. *Land banking/Flipping land:* Buying more land than is needed for the project and reselling it at an increased price can dramatically reduce the net cost of the land. Assuming significant appreciation of land value continues to be the trend, this can even make the land essentially free. However, it does not solve the challenge of financing the land since the initial purchase still needs to happen upfront.

Strategy 3: Alternative Technologies

Using alternative technologies can be challenging in the Rwandan market, but if done correctly it has the potential to be an essential piece of bringing down the cost. The most important aspect to be aware of is ensuring that the look and feel of the home is similar, if not the same, as traditional techniques. When someone purchases a home, whether they are rich or poor, they want to put their savings into old-fashioned brick and mortar rather than a shiny new technology that is untested and unfamiliar.

Strategy 4: Creative Financing

Given the unfriendly nature of the lending climate in Rwanda, it can be hugely beneficial to think creatively about how to raise funds. Looking to international lenders for finance is one way to address this problem. Development Finance Institutions (DFIs) and other International Organizations can be sources of project finance with single digit interest rates. This reduced cost of capital (especially in such capital intensive and highly leveraged projects) can make a big difference in the final unit price.

Strategy 5: Subsidy

1. Government Subsidy: Cashing in on the subsidies offered by the government seems straightforward, but many developers seem unaware of what is offered, or simply disillusioned that it will be delivered. Therefore, it is important to be familiar with the incentives and the path to benefit from them.
2. Building subsidy into your model: While the best scenario is a development where every unit is profitable, this is not always possible if the goal is to cater to low-income populations. Therefore, the choice to incorporate cross-subsidy is worth considering. This can be in the form of traditional cross-subsidy, where the affordable units make a loss that is subsidized by middle-income units. Or the affordable units can make a small margin while middle-income units make a larger margin. Either scenario creates a mixed-income development. Many housing experts believe that in order for affordable housing to be financially viable, especially in an urban setting and without alternative technologies, mixed-income is the only way to go.

Strategy 6: Design

Innovative designs and layouts can help to use space efficiently and effectively. There have been many interesting experiments with creative designs for affordable housing communities that save on cost and space as well as create more community interaction and reduce the risk of ghettoization. Most affordable housing communities that fail to increase quality of life do so because master planning and design were overlooked. They ignore the benefits of creating mixed-use developments with community spaces and commercial areas. The importance of design should not be underestimated!

Strategy 7: Incremental Construction

In some contexts incremental construction increases the ability to provide homes at an affordable

rate. An Acumen Fund portfolio company in Pakistan, Ansaar Management Company (AMC) provides an example of successful, developer-led, incremental construction.

AMC's model entails constructing and selling homes block by block to avoid the large amounts of capital needed at one time to build in the traditional fashion. This means that economies of scale are not achieved and therefore the profit per home is less than a traditional model. But in exchange for a lower margin, AMC is able to recycle capital and spread out demand, and the profits made from each block can be used to fund the construction of the next block.

Strategy 8: Self Construction

Self-construction refers to homeowners driving the construction of their own homes, which allows them to work within their own financial requirements and timeframe. Self-construction can be integrated into a model in a variety of ways. It can range from a private sector version of the "site and services" model (infrastructure and foundations are provided, and the homeowner purchases a plot and builds their own home) to a simple ground floor structure constructed by the developer, leaving residents with the ability to expand as their financial situation allows.

The key to successful homeowner-led incremental construction is ensuring the quality of the construction both to maintain the look and feel of the development and to maintain safety standards. This can be challenging and requires a strong ongoing role from the developer or other affiliated agency, sometimes in the form of technical assistance through engineering and design support.

Strategy 9: Community supported labor

Labor costs can be cut by hiring the current or future residents as construction labor. This strategy was used by different investors and allowed them to both cut costs and to increase the residents' feeling of ownership in the project. However, it is worth noting that it may take more management and is only viable for certain project designs and construction techniques. Usually the community workers must also be accompanied by skilled labor.

Strategy 10: Avoiding Speculation

What is the use of bringing down the price if it does not reach your target market in the end? There is no clear answer to keeping speculators from buying, especially since in many cases they are not wealthy individuals buying plots in bulk, but middle class people who want to make little extra money. However, developing a strategy to avoid this cannot be an afterthought and must be carefully developed from the outset. Some potential strategies include:

1. Developing strict criteria for buyers to qualify.
2. Ensuring owner-occupation within a short time period.
3. Limiting the number of homes that can be purchased by one individual.
4. Withholding title deed for a period of time, such as 5 years, so owners are unable to re-sell.

Strategy 11: Develop contracts with suppliers

Given the volatile economic environment, materials prices can skyrocket and turn a healthy project completely unviable. In order to avoid this, develop fixed rate contracts with materials suppliers whenever possible. Some may even have Corporate Social Responsibility programs, so do not be afraid to market the social impact side of the project in order to negotiate better terms.

c) Housing Supply: Challenges

i. *Challenge 1: Availability of finance*

Project Finance: Housing developments are extremely capital intensive and highly leveraged. Yet it can be difficult to secure debt, especially at reasonable rates, which are a key component of bringing down the cost for the end-user. In fact, the cost of finance is one of the most prohibitive factors in the Rwandan market. The loans and mortgage interest rates of over 15% in Rwanda are too high to afford for those people with low income wages(Mohit et al.,2010).For the purpose of designing an affordable housing program, affordability can be approached in two ways: by household income categories, and by housing cost categories. Thus the GoR needs to decide and define the key household and housing unit categories to support; options include: a) Support affordability up to the lower to middle class households (say USD100-1000 per month); b) Support only the low-income segment (say USD100-300 household income per month), c) Some instruments to support the lower income and some for the middle income, categories; d) Support specific low-income employment categories like teachers, police, healthcare staff, or low-paid civil servants in addition to some general income based schemes.

ii. *Challenge 2: Volatile economic environment*

Rapid inflation has caused large increases in the cost of materials and land. On average, developers saw their costs increase by 20 percent in the last 6 months of 2017. It is difficult to maintain a healthy margin with this level of inflation, especially if a large portion of the units were sold off plan at a price that failed to predict the inflation. This is yet another reason to leave a lot of leeway in your model and to understand that while there are many benefits to selling off plan (i.e. selling homes before construct begins or is completed), there are also consequences that should be thought through.

d) The characteristics of households entering affordable housing

Households entering the affordable rented sector come from a range of different backgrounds.

Looking the case of Rwanda especially the proximity of Kigali, 42% of new tenancies in affordable homes are provided to families (of which 60% are single parent families); almost 10% to elderly households; 35% to single adults and 14% to multiple adult households.

The median annual income is around 2.4 Million Rwandan francs for households entering affordable rented housing. This varies greatly by household type however. Two parent families have a median annual income of almost 580000Frwper month equivalence of $700 whilst single adults have an average income of around 250000Frw per month. Overall the incomes of households entering affordable housing are significantly high than the average household income of around 1m across the population as a whole. This may probably be an indicator of market fail.

V. Conclusion

In this study it has reviewed that like elsewhere in Africa, the affordable housing in Rwanda is still an issue. Different thing have to be done to balance the requirements of affordable houses with the household incomes. Indeed, the price of rent or ownership of affordable houses is extremely high compared to the wages and other household incomes. Furthermore, the high loan and mortgage's interest rate in Rwanda is not favour people to own their affordable houses. Only few educated people with good jobs and good household income (Business persons) are able for entering affordable rented housing. But still low cost affordable housing is possible if both public and private sectors work together to minimise all these hindrances towards affordable housing.

VI. Recommendations

As illustrated, the main challenge to obtain affordable housing is high interest rate and big gap between house prices and level of household income. To balance this, the government have to intervene with special fund dedicated to affordable houses that can act as both a subsidy; making the project more financially viable and as a guarantee, allowing a credit constrained housing association to borrow against this amount. On other side, the fund will adjust the interest rate in order to attract more borrowers to invest in affordable housing.

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An Analysis of Factors Determining the Viability of Locally Owned Construction Firms in South West Nigeria

By Oladimeji Olubimbola
Obafemi Awolowo University

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I. Introduction

Viability is the ability of a thing to maintain itself or recover its potentialities. Generally it means "Capacity for survival" and is more specifically used to mean a capacity for living, developing, or germinating under favourable conditions (Biomedicine, 2013). Viability study is conceptually perceived and measured in the business world by the long time survival of a business, and its ability to have sustainable profits, leverage, efficiency and liquidity over a period of time. If a business is viable, it is able to survive for many years, because it continues to make profits year after year. The longer a company can stay profitable, the better its viability (Jean, 2013).

Locally owned construction firms in Nigeria are faced with various limiting factors which negatively influence their viability. Olugboyega (1995) categorized these difficulty into three: the difficulty presented by the particular market and business involvement in which the contractor operates (Adams, 1997), difficulty derived from client and client's representative, and personal inadequacies of the contractor. In the same vein, Wells (1998) singled out inadequate construction capacity as a major problem to the viability of LOCOFs in developing countries. These are: the low levels of training and poor organisation in the construction industry, large number of very small and inefficient firms, lack of planning at all levels of the construction process and inadequate capacity and inefficiency in the building materials industries. Others include: lack of national construction firms offering bids for civil engineering projects, lack of capacity and "economic rationality" in design and construction and the production of building materials.

More recent identifications of problem affecting the growth of local construction firms by Bala *et al.* (2009) established a link between government policies, external and internal problems of firms. In addition, Aje *et al.* (2009) stressed the significant impact of management capability on the cost and time performance of building project. Oladimeji and Ojo (2012) observed that that the sum local contractors spent on fixed asset and their average profit was low although their average profit is higher than the UK margin on profit. Despite various literature bothering on the well being of local firms, there is still the need for regular identification and examination of factors determining its viability. This will enhance an up to date assessments of the firms and suggest better ways by which they can significantly contribute to the needed social and economic development.

II. Factors Influencing Locof's Viability

This paper identified 37 factors influencing the viability of construction firms from reviewed previous studies on construction business performance. Identified factors in studies on construction business financial management were: (1) cash for construction work (Wang e*t al.*, 2010); (2) construction profit margin (Halim *et al.,* 2010); (3) accessibility to building construction loan (Peterson, 2009); (4) interest on loan (Eyiah and Cook, 2003); (5) credit purchase of construction material (Peterson,2007); (6) cost of plant and equipment purchase, maintenance and hiring (Adams, 1997); (7) prompt payment of work certificate

Author: Obafemi Awolowo University Teaching Hospital Complex, Nigeria. e-mail: oladimeji70@yahoo.co.uk

(Fatoye, 2012); (8) cost of construction labour (Graham, Smith, and Tommelein, 2005) and (9) cost of construction material (Wahab and Lawal, 2011).

Studies on management of construction operation had the following identified factors: (1) management of construction site material (Dey, 2001); (2) predictability of construction cost and time (Aje *et al.*, 2009); (3) management of construction site labour, plant and equipment (Edward *et al,* 2004) and (4) organisational competence and client satisfaction (Yu *et al.*, 2007). Factors identified in studies on construction business organisation factors were: (1) quality of service and works (El-Mashaleh *et al.*, 2007); (2) employee satisfaction (Nudurupati *et al.*, 2007) and (3) reputation of good client-contractor's relationship (Chinyio *et al.*, 1998). Studies on construction business firm's evaluation studies had the following: (1) age of operation (kale and Arditi, 1999); (2) firm size (Huang, 2009) and (3) firm's impact on the community (Bala *et al.*, 2009).

Construction business market environment studies identified the following factors: (1) tax (Abidali and Harris, 1995); (2) inflation (Semyalo, 2012); (3) corruption (Alabi, 2010); (4) construction work turnover and successful tender rates (Kangari *et al.*, 1992); (5) tendering practices (Kim and Reinschmidt, 2006); (6) government policy (Bala *et al.*, 2009) and (7) bad weather and natural disaster (Alinaitwe *et al.,* (2007)). Factor influencing viability identified in studies on construction business technical competence were: (1) construction technical expertise (Yu *et al.*, 2007); (2) quality of construction work and services (Wang *et al.*, 2010); (3) specialization of construction work (Koksal and Arditi, 2004); (4) advanced construction technology (Koksal and Arditi, 2004) and (5) number of high performing professionals (Ramirez *et al., 2004*). Finally, factors identified in studies on construction operation health and safety were: (1) incident rate (Odeyinka *et al.*, 2005); (2) accident cost (Fang *et al.*, 2004) and (3) availability of safety equipment (Lingard and Homles, 2001).

III. Methodology

Primary data were sourced from Locally Owned Construction Firms (LOCOFs) that were awarded building construction contracts between year 2005 and 2015 by Federal Universities and Federal University Teaching Hospitals in Southwestern Nigeria. Preliminary survey to this study showed that most prequalification exercises for construction contractors in this period started in year 2005. This period witnessed a significant improvement in funding of Nigerian tertiary institutions and improvement in university capital expenditure (Bamiro, 2012; Famade *et al.*, 2015). In addition, the period chosen for this study was also informed by the need to have the more recent and updated evaluation of LOCOFs.

The choice of federal teaching hospital and university institutions in Lagos, Ondo and Osun out of the six states was reached through the grouping of the states into three groups in order of contiguousness: Lagos and Ogun, Ondo and Ekiti, and Oyo and Osun state. Lagos was selected in preference to Ogun state due to its vast physical development, strategic location and very high concentration of infrastructural development. Ondo was selected in preference to Ekiti to represent one of the oldest states in the region and the Federal University located there is much larger and older than the Federal University in Ekiti state. Osun was selected in preference to Oyo to represent one of the newest states in Southwestern Nigeria.

There are 6 federal universities and 3 federal university teaching Hospitals in Southwestern Nigeria out of which only 3 federal universities and 2 federal university teaching hospitals are located in Lagos, Osun and Ondo states. These universities and university teaching hospitals are: University of Lagos (UNILAG) Akoka, Obafemi Awolowo University (OAU), Ile-Ife, Federal University of Technology Akure (FUTA), Lagos University Teaching Hospital (LUTH) and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC). Specifically, the study surveyed the managing directors or their representatives and 2 other professional members of staff that had engaged in construction works in the institutions from year 2005 to 2015. Information from the institutions displayed in Table 1 indicated that there were 59 firms with 18 in UNILAG, 14 in OAU, 12 in FUTA, 5 in LUTH and 10 in OAUTHC. This brings the total number of expected surveyed firms' respondents to 177. However, a total number of 31 firms comprising of 65 respondents' questionnaires were completed, returned and found useful for analysis. This represented a response rate of 53% of the total surveyed firms which according to Ellhag and Boussabaine (1999) and Idrus & Newman (2002) is good enough in construction management studies. This response rate is higher than earlier studies on construction firms by Aibinu (2007), Bala *et al.* (2009) and Hany *et al.* (2013) which employed the use of surveyed sample frames of 200, 150 and 67 firms with response rates of 41 (21%), 30 (20%) and 27(40%) firms respectively. It is also of interest to note that in a study on failure and financial related factors in Malaysian contracting firms, only six firms and six representatives in Malaysia were sampled and three years financial statements were accessed (Halim *et al.*, 2010).

Table 1: Number of Sampled Locally-Owned Construction Firms

States	Institutions	Total Number of Surveyed Firms	Total Number of surveyed personnel of Firms	Total Number of Firms that Responded	Total Number of Questionnaire fit for Analysis
Lagos	UNILAG	18	54	3	6
	LUTH	5	15	2	2
Ondo	FUTA	12	36	10	19
Osun	OAU	14	42	10	25
	OAUTHC	10	30	6	13
Total		**59**	**177**	**31**	**65**

IV. Presentation and Discussion of Findings

a) Characteristics of actual sampled LOCOFs

Table 2 showed characteristics of the actual sampled locally owned construction firms respondents in this study. Construction professionals (36.9%) while others are contract manager (20%) and site managers (29.2%). About 50% of them had an experience of more than 10 years and more than 70% of the firms have been in operation for more than 10 years. In addition, more than 50% of the firms have executed over 11 construction projects and most firms operate in Nigeria alone (86.2%) and are mostly patronized by both private and public sector in Nigeria. Although a few of them did not give the detail of their turnover, however 52.30% of the respondent claimed their firms had a turnover of between N10 million to N 150 million in the year 2014 while 13.8% of them had a turnover of more than N150 million . These characteristics suggest that respondents have the exposure and long term experiences to be able to give substantial information that could help in making useful inferences and deductions on factors influencing the viability of locally owned construction firms.

Table 2: Characteristics of actual sampled LOCOFs

	Frequency	Percentage
Respondents' designation		
Contract manager	13	20
Construction professional	24	36.9
Site manager	19	29.2
Others	9	13.8
Years of experience		
0-5years	20	30.8
6-10years	15	23.1
11 – 20years	20	30.8
Over 20years	10	15.4
Age of construction company operation		
0-5years	2	3.1
6-10 years	7	10.8
11-20 years	22	33.8
>20 years	21	33.8
No response	12	18.5
Number of project in time past		
0-5	12	18.5
6-10	15	23.1
11 – 20	25	29.2
over 20	13	29.2
Number of permanent staff		
0-5	12	18.5
5 – 50	44	67.7
over 50	8	12.3
No response	1	1.5
Annual firm's turnover		
less than N10 million	11	16.9
N10 to N49 million	20	30.8
N50 to N150 million	14	21.5

Over N150 million	9	13.8
No response	11	16.9
Types of Construction work		
General building	35	53.8
Civil engineering	12	18.5
Building and Civil No response	17 1	26.2 1.5
Firm's scope of operation outside Nigeria		
Major	6	9.2
Minor	3	4.6
Non	56	86.2
Major Client		
Government	29	43.0
Both	36	57.0

b) Ranking of factors influencing the viability of LOCOFs

Table 2 shows the mean value, standard deviation, relative importance index (RII) and the ranking of the 37 factors earlier identified from literature as factors influencing the viability of construction contractors. The Standard deviation of each indicator is relatively small enough to conclude that the respondents agreed on the factors influencing the viability of LOCOFs. The rank of each variable was determined by calculating the arithmetic mean and the relative importance index of each variable and subsequently arranged in a rank order (Table 3).

An overview of the ranking of factors influencing the viability of LOCOFs shown in Table 3 indicates all the factors having a relative importance index (RII) and mean that is greater than 2.5 and 0.5 respectively. However, nine factors have a RII and mean greater than 4 and 0.8. These mean that despite the fact that all the identified factors were important to the viability of the construction business, nine factors tend to be extremely important. These factors cut across customer satisfaction, financial, internal business and environmental perspective of the construction business. Organizational competence which ranked first and quality of construction work and services which ranked third are customers' satisfaction based factors. Cash for construction work which ranked second and prompt payment of work certificate and cost of construction materials which ranked fifth and seventh respectively are financial based factors. Availability of skilled labour, and employee satisfaction are internal organisation and strength of the firms based factors. Lastly, prompt payment of work certificate and cash for construction work earlier referred to as financial based are also influenced by government policy and practice and may also be inferred to as construction business environmental based factors. All these factors expressed by their various ranking influences the survival of the construction business.

Table 3: Relative Importance Index of Factors Influencing the Viability of LOCOFs

No.	Factors Influencing the viability (survivability) of LOOFs	Mean	SD	RII	Rank
1.	Organizational competence	4.40	0.81	0.88	1
2.	Cash for construction work	4.36	0.74	0.87	2
3.	Quality of work and services	4.31	0.75	0.86	3
4.	Quality of construction work and services	4.30	0.75	0.86	3
5.	Availability of Skilled labour	4.16	0.84	0.83	5
6.	Prompt payment of work certificate	4.16	0.84	0.83	5
7.	Cost of construction material	4.08	0.74	0.82	7
8.	Employee satisfaction	4.06	0.77	0.82	7
9.	Reputation of good clients-contractors' relationship	4.00	0.84	0.81	9
10.	Availability of artisan and craftsmen	4.00	0.76	0.80	10
11.	Management of construction site Material	3.98	0.77	0.80	10
12.	Management of construction site labour, plant and equipment	3.94	0.89	0.79	12
13.	Government Policy	3.91	0.94	0.78	13
14.	Availability of safety equipment	3.91	0.97	0.78	13
15.	Construction technical expertise	3.86	0.83	0.77	15
16.	Procurement practices (The way contract is awarded)	3.84	0.95	0.77	15
17.	Cost of construction labour	3.81	0.66	0.76	17

18.	Construction work turnover/successful tender rate	3.81	0.66	0.75	18
19.	Specialization of contractors work	3.77	0.79	0.75	18
20.	Number of high performance professional	3.77	0.96	0.75	18
21.	Predictability of construction cost and time	3.73	0.95	0.75	18
22.	Project organization structure	3.73	0.93	0.74	22
23.	Construction profit margin	3.66	0.72	0.74	22
24.	Advanced construction technology	3.64	1.07	0.72	24
25.	Inflation	3.55	1.08	0.71	24
26.	Cost of plant and equipment purchase and maintenance	3.56	0.83	0.71	24
27.	Tax	3.48	1.10	0.70	27
28.	Bad weather and Natural disaster	3.45	1.14	0.69	28
29.	Accessibility to loan	3.44	1.11	0.69	28
31.	Interest on loan	3.20	1.22	0.64	30
32.	Credit purchase of material	3.17	1.03	0.64	30
30.	Corruption	3.20	1.52	0.63	32
33.	Incident rate	3.17	1.05	0.63	33
34.	Age of operation	3.17	0.92	0.63	33
35.	Firm impact on community	3.13	0.92	0.62	35
36.	Accident cost	3.03	1.02	0.60	36
37.	Firm size	2.92	1.00	0.58	37

At this juncture, it is very important to describe the thirty seven important factors in a more concise form for ease of inferences and appropriate deductions. To achieve this aim, principal component factor analysis was used to reduce these factors into major components factors.

c) *Principal factors influencing viability of LOCOFs*

This section sets out to reduce the 37 variables identified as important factors influencing the survival of the LOCOFs to a fewer number component factors. Principal component analysis was carried out using the computer-based Statistical Package for Social Sciences (SPSS version 15). Common factors which account for the correlation among the variables were extracted and this resulted in a reduction of thirty –seven (37) large body of variables to eleven (11) components factors. The grouping of variables is based on their factor loadings. A factor loading indicates the degree of association of a variable with the component and the percentage variance of the component that is explained by the variable. Variables which appear to have the highest loading in one component belong to that component, also the highest loading of a variable higher than 0.4 was assigned to the components that has the loadings (see Table 3).

Factor analysis is widely belief to be an inadequate statistical analysis on small sample sizes and for a study as this with a less than 100 sample size, there is the need to validate the use of this statistical method. As observed in section 4.3, small sample size is sometimes one of the features of a study as this. This is due to the organizational structure of most LOCOFs which makes it difficult for them to be easily accessed except during active site construction work.

Factor analysis has been used on small sample size which is sometimes referred to as sample to variable size (STV) ratio. MacCallum *et al.*, (1999) made use of a STV of 1.2:1, Henson and Robert (2006) and Bala *et al.* (2009) made use of a STV of 1.48:1 and 1:1 respectively. MacCallum et al., 1999 posited that as communalities become lower the importance of sample size increases when all communality are above 0.6, relatively small samples (less than 100) may be perfectly adequate. Preacher and MacCallum (2002) also stipulate that "As long as communalities are high, the number of expected factors is relatively small, and model error is low (a condition which often goes hand-in-hand with high communalities), researchers and reviewers should not be overly concerned about small sample sizes.

Result from Table 3 reads 11 components factors with 37 variables and it represented a sample to variable size of 1.75:1. (65/37) with all its Eigen values greater than one. The Kaizer-Meyer-Olkin (KMO) measure of sampling adequacy achieved a value of 0.551 which is very close to 0.6, this is appreciable owing to the fact that most communality of the variables after extraction in this study were above 0.7. The Bartlett test of sphericity was also significant ($\chi^2=1385.548$; $df=666$; $p<0.001$) suggesting that the population matrix was not an identity matrix. To this end, necessary tests in respect of the factorability and adequacy of the sample size were favourable for factor analysis to proceed.

Table 4: Principal Factor Analysis of Factors Influencing Viability of LOCOFs

	Component											Communality
	1	2	3	4	5	6	7	8	9	10	11	
Cash for construction work.	.111	-.063	.075	.004	-.123	-.083	-.175	.793	-.019	-.202	.155	.769
Construction profit margin.	-.076	-.073	.096	-.043	-.040	.064	-.021	.118	-.031	.019	.924	.898
Accessibility to loan.	.033	-.053	.098	.115	.247	.726	-.064	.119	-.007	.047	.075	.641
Interest on loan	-.081	.053	.382	-.056	.016	.582	.254	-.178	.032	-.238	-.021	.652
Credit purchase of material.	-.001	-.210	-.161	.219	.256	.491	.168	-.017	.203	-.220	.453	.749
Prompt payment of work certificate.	.104	.288	.184	-.085	.141	.341	.123	.464	-.322	.093	.332	.725
Cost of plant and equipment purchase maintenance and hiring.	.277	.174	.162	.285	.106	.035	.351	.401	.188	.091	.342	.671
Cost of construction labour.	.152	.175	.270	.019	.206	.162	.329	.508	.167	.122	-.112	.618
Cost of construction material.	.057	-.037	.261	.419	.340	.100	.175	.494	.146	.087	-.035	.679
Project organization structure.	.782	.067	.152	.094	.114	-.032	.009	.152	.188	.159	-.120	.761
Management of construction site. Material	.691	.230	.313	.029	.270	.275	.082	-.107	-.097	-.024	.054	.809
Predictability of construction cost and time.	.481	.216	.446	.368	.020	.138	-.020	-.100	-.221	.156	-.076	.722
Management of construction site labour, plant and equipment.	.749	.064	-.012	.101	.149	-.040	.131	.164	-.093	-.071	.018	.658
Organizational competence/client satisfaction.	.196	.181	.786	.243	.140	.093	-.053	.076	-.004	.087	.145	.814
Quality of service and works.	.134	-.027	.839	.071	.196	.138	.172	.221	.015	.011	.120	.878
Employee Satisfaction.	.110	-.127	.604	.264	.336	.074	.135	.176	.090	-.115	-.205	.694
Reputation of good client-contractor's relationship.	.289	-.132	.177	.149	.514	-.046	.522	.124	-.085	-.286	.028	.798
Age of operation.	.333	.167	-.022	.393	.385	-.033	.229	-.037	-.305	.387	.072	.744
Firm Size.	.597	.200	.030	.310	-.070	-.205	.011	.286	.049	.394	-.039	.781
Firm's Impact on the community.	.178	.338	.239	.175	.109	-.039	.161	-.075	-.100	.613	-.071	.669
Inflation	-.193	.147	-.041	-.010	-.020	.289	.223	-.110	.671	-.083	-.049	.666
Tax	.147	.076	.029	.033	.010	.048	.138	.139	.776	-.008	.021	.673

Table 5.22: Principal Factor Analysis of Factors Influencing Viability of LOCOFs (Continued)

	Component											Communality
	1	2	3	4	5	6	7	8	9	10	11	
Corruption	-.028	-.034	.084	.248	-.066	.706	.115	.007	.367	.035	.032	.724
Construction work turnover/successful tender rate.	-.009	.226	.239	.254	.461	-.041	-.031	-.034	.435	.447	.147	.800
Availability of Skilled labour.	.196	.183	.365	.072	.520	.248	-.144	.088	.106	.144	.116	.616
Availability of Artisan and craftsmen.	.219	.135	.270	.068	.775	.152	-.081	-.044	-.090	-.049	-.036	.788
Procurement practices (The way contract is awarded).	.043	.238	.007	.080	-.077	.024	.787	.096	.110	.045	-.025	.714
Government policy.	.103	.142	.118	.024	-.081	.182	.725	-.184	.326	.168	.067	.783
Bad weather and Natural disaster.	.156	-.024	.221	.648	.301	.037	.066	.120	-.062	.109	-.170	.649
Construction technical expertise	.427	.341	.104	.016	.435	.327	-.085	.106	.107	.018	-.082	.643
Quality of construction work and services	.039	.464	.371	.112	.218	.001	-.047	.095	.017	-.648	-.054	.849
Specialization of construction work	.099	.794	.160	.073	.089	-.029	.093	-.187	.075	.106	-.016	.741
Advanced construction technology	.193	.884	-.017	.130	.032	.030	.128	.030	.128	-.032	-.040	.874
Number of high performance professionals	.115	.779	-.063	.182	.080	-.091	.172	.234	.024	.061	-.016	.761
Incident rate	.026	.323	.115	.735	-.016	.240	-.003	.095	.001	.093	-.006	.734
Accident cost	.278	.168	.132	.784	-.003	.098	.084	-.086	.162	-.072	.146	.814
Availability of safety equipment	.528	.152	.306	.331	.090	-.295	.216	-.229	.045	-.123	.131	.733
Eigen Value	3.45	3.28	3.13	2.82	2.49	2.43	2.21	2.11	2.04	1.77	1.57	
% of total variance	9.27	8.86	8.46	7.63	6.74	6.56	5.97	5.70	5.50	4.77	4.24	

Total % of variance explained = 73.75

Kaiser-Meyer-Olkin Measure of sampling adequacy = 0.551(aprox. 0.6)

Bartlett's Test of Sphericity: $\chi 2=1385.548$; df=666; $p<0.001$

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 18 iterations.

The first component factor is effective management of individual project related issues and it accounted for 9.34% of the observed variance. Six items loaded under this component ranged between 0.481 and 0.782. Items loaded and their loading scores include: project management structure (0.782); management of construction site labour, plant and equipment (0.749); management of construction site material (0.691); firm size (0.597); availability of safety equipment (0.528), and predictability of construction cost and time (0.481). Most of the items loaded in this component factor focused on the uniqueness of each construction projects that should be well planned for the overall construction firms' survival. Construction labour,

material, plant and equipment should be properly harnessed on each project and in such a way as to gain construction cost and time. Che Wan Putra *et al.* (1999) and Edward (2001) noted in summary that the result of improper handling and managing material, plant and equipment on site during a construction process will influence the total cost, time and the quality of the construction work. To this end, it is expected that a well organised and positioned construction project management structure on each site will go a long way in representing and protecting firms' interest well in effective management of all its resources for improved production.

The second component factor was improved construction method related issues and it represents 8.86% of the observed total variance. The following were the three items loaded and its loading scores: advanced construction technology (0.884); specialization of construction work (0.794) and number of high performance professionals (0.779). The three items in this component are essential to improving construction works delivery. High quality construction products and material can be done at lowest possible price due to good technical expertise resulting in an enhanced construction business.

The third and tenth component factors were clients' satisfaction related issues and they represent 8.46% and 4.77% of the observed total variance respectively. Three items were loaded under the third component while two items were loaded under the tenth. Items under the third components include: quality of service works (0.839); organisational competence/ client satisfaction (0.786) and employee satisfaction (0.604). The tenth component also include: quality of construction work and services (-0.648) and firms' impact on the community (0.613). This indicator shows the effect of employees' satisfaction and improved construction work delivery on the viability of construction firms obtained in this analysis. Satisfaction of customers and other interested parties is necessary for the success of firms. In other word, increasing the satisfaction of customers and stakeholders through effective goal development, cost reduction, productivity and process improvement has proved to be essential for organisations to stay in operation (Oakland and Marosszeky, 2006).

The fourth component factor was on construction safety and uncertainty related issues which represented 7.62% of the observed variance. Three items loaded under this component include: accident cost (0.784); incident rate (0.735) and bad weather and natural disaster (0.648).This result indicates the importance of construction safety and uncertainty related issues to the viability of LOCOFs. Construction safety is treated with caution and becomes very important when cost arises from penalty due to non compliance with regulations and the cost due to accident and injuries. Accident and weather conditions are both construction risk, while the former can be reduced and possibly averted through good safety behaviour and safety kits, the later cannot. Although most developed countries construction firm insurance policy are well developed to mitigate this risk, most developing countries especially in African are yet to achieve this fit (Windapo and Martins, 2010). Uncertainty arising from adverse weather condition are known to result in construction cost overrun (Ameh et al., 2010) and adversely influence the performance of construction firms (Nudurupati et al., 2007).

The fifth component factor was construction labour and turnover which represented 6.74% of the observed variance. Three items loaded under this component include: availability of artisan and craftsmen (0.775); availability of skilled labour (0.520) and construction work turnover/successful tender rate (0.461). This result underscores the importance of the availability of all relevant construction labour of all trades in executing construction works. Also, A high turnover consequent to the number of contracts won will enhance the availability of fund for firms' construction operation and this can significantly contribute to its profitability and hence its viability (Kaka and Cheetham, 1997; Odeyinka *et al.*, 2003; cui *et al.*, 2010).

The sixth component factor was lack of construction loan and corruption and this represents 6.56% of the observed variance. Four items were loaded under this component and it ranged from 0.491 to 0.726. Items loaded under this component include: accessibility to loan (0.726); corruption (0.706); interest on loan (0.582) and credit purchase of material (0.491). This result indicates that LOCOFs viability will be improved if it has access to very low interest credit and corruption in the industry is drastically reduced if not eliminated. Presently, the percentage of loans disbursed to the construction sector is one of the lowest compared to other sectors such as manufacturing. Industry participants believe that construction remains a misunderstood industry and hence, is still being deemed risky by financial institutions. The ability to obtain funding, however, is a critical factor to the success of the contractors (CIDB, 2008). As at today, interest rate in the banking sector remains as high as 20%, lenders securing such loan do so, possibly to keep busy. As a result of the high interest rate, it may be impossible for lenders to make profit with such loan. It was also observed by Ameh *et al.*, (2010) that high interest charged by banks on loans is a top ranked factor responsible for construction cost overruns. In the same vein, these authors also ranked fraudulent practices and kickbacks as also a top ranked factor responsible for cost overruns in the construction sector.

The seventh and ninth component factors were referred to as construction business environment related issues and each component accounted for 5.97% and

5.50% of the observed variance respectively. Three items loaded under the seventh component include: procurement practices (0.787); government policy (0.725) and reputation of good client-contractor relationship (0.522). The ninth component has two items loaded and it include: tax (0.776) and inflation (0.671). These result revealed the importance of the impact of government activities, policies and the countries' macroeconomic on the survival of the local construction business.

The eighth and eleventh component factors were referred to as firms' profitability related issues and each component accounted for 5.7% and 4.24% of the observed variance respectively. Five items loaded under the eighth component include: cash for construction work (0.793); cost of construction labour (0.508); cost of construction material (0.494); prompt payment of work certificate (0.424) and cost of plant and equipment purchase, maintenance and hiring (0.401). The only recognized item loaded under the eleventh component is construction profit margin (0.924). This result gives credence to the importance of firms' profitability related issues on the viability of LOCOFs'. Profitability is also considered as one of the most important indicators in many other studies, such as Wang *et al*. (2010) and Yu *et al.* (2007). One of the most common corporate economic objectives is profitability and construction executives ranked it as the first indicator to measure financial performance of companies (Halim, 2010) . Financial problems faced by contractors are also due to low profit margins from projects. Firms most often find themselves in a tight situation of delivering good construction product at the cheapest price under the stiff competitive tendering system. Although this system is the best way to ensure the completion of any project at the lowest price, it is the most difficult obstacle contractors are forced to overcome in an attempt to survive the construction business competitive world. It is pertinent to note that low profit margin was identified as one of the unique features of the construction business that predisposes it to a huge risk and a strong contributory factor to its failure (Ibrahim, 2012; Kivrak and Arslan, 2008).

In conclusion, the minor differences observed in the percentages of variance in the eleven components revealed a closely related level of importance between the components factors which suggest that LOCOFs viability is a function of many closely related factors and not just a small group or a single factor. However, the highest factor loading assigned to construction profit margin showed a very significant importance of its impact on the viability of the locally-owned indigenous construction firms.

V. Conclusion and Recommendation

To identify and examine factors influencing the viability of LOCOFs, sixty-five properly filled questionnaires were analysed. The characteristics of respondents show 36.9% as construction professional, 20% and 29.2% as contract managers and site managers respectively among other characteristics. Ranking of factors influencing the viability of LOCOFs indicated that all the factors had a relative importance index (RII) and mean that is greater than 2.5 and 0.5 respectively. However, nine factors had a RII and mean greater than 4 and 0.8. These mean that despite the fact that all the identified factors are important to the viability of the construction business, nine factors are extremely important. An attempt to describe the thirty seven important factors in a more concise form for ease of inferences and appropriate deductions led to the analysis of data using the principal component factor analysis. Eleven component factors obtained were referred to as: effective management of individual project; improved construction method; clients' satisfaction and construction safety related issues. Others include: construction labour and turnover; lack of construction loan and corruption; construction business environment and firms' profitability related issues. A closely related level of importance was observed between components factors that determine the viability of LOCOFs which suggest that their viability is a function of many closely related factors and not just a small group or a single factor. However, the highest factor loading assigned to construction profit margin showed a very significant importance of its impact on the viability of the locally-owned indigenous construction firms

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Survey the Role of Information Technology in Agricultural Development and Rural Women's Entrepreneurship (Case Study of Agricultural Jihad Organization in Kurdistan Province)

By Mostafa Khazaeli, Hiva Hanifi, Hamid Khazaeil & Zahra Hanifi
Islamic Azad University

Abstract- In the current era, the entrepreneurship is in a role of an approach to develop and prosper and the growth of human society and a suitable approach for job creation and income increment in rural areas. The purpose of current study is to survey the role of information in agricultural development and rural women's entrepreneurship. This study is in applied research in the terms of purpose, and in the terms method is considered as a descriptive research and from correlation cluster. The main data collection tool in this research is questionnaire. In this regard, the questionnaire of information technology role in agricultural development was used. The statistic society of this research is the employees of Agricultural Jihad Organization in Kurdistan. For sample selection, Cochran formula was used. In this research, 72 persons were randomly selected as statistic society that it decreased to 60 persons along with the error calculation. The results show that there is a meaningful (or significance) relationship between the information technology role and rural women's entrepreneurship.

Keywords: information technology, agriculture, entrepreneurship, advancement, development.

GJMBR-B Classification: JEL Code: Q00

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Mostafa Khazaeli [α], Hiva Hanifi [σ], Hamid Khazaeil [ρ] & Zahra Hanifi [ω]

Abstract- In the current era, the entrepreneurship is in a role of an approach to develop and prosper and the growth of human society and a suitable approach for job creation and income increment in rural areas. The purpose of current study is to survey the role of information in agricultural development and rural women's entrepreneurship. This study is in applied research in the terms of purpose, and in the terms method is considered as a descriptive research and from correlation cluster. The main data collection tool in this research is questionnaire. In this regard, the questionnaire of information technology role in agricultural development was used. The statistic society of this research is the employees of Agricultural Jihad Organization in Kurdistan. For sample selection, Cochran formula was used. In this research, 72 persons were randomly selected as statistic society that it decreased to 60 persons along with the error calculation. The results show that there is a meaningful (or significance) relationship between the information technology role and rural women's entrepreneurship.

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I. Introduction

The information technology is an opportunity which we can develop the organization business using it and expand and immediate the services. Therefore, achieving to an acceptable level of information technology for organizations is inevitable. The informational and communicational technologies can be effective in rural people's empowerment and their poverty decrement as well as improving the education level and rural people's literacy can put prospects of sustainable and permanent development of rural people (Imani, 2006, 120). The information and communication technology is called a set of tools which uses for producing, processing, transmitting and storing the information in current era. Also, it's brought about in electronic village definition that: it's the village which the wave of information and communication technology has altered its face and the electronic functions are obvious in rural people's life (Jalali, 2006).

Agriculture is an important sector which majority of the rural population depend on. Smallholders form the bulk of agricultural producers. However, they remain the majority of the food and income poor (IFAD, 2007). Improving smallholder agriculture is therefore chief to poverty alleviation, and information and knowledge are critical to this effort. In the wake of growing demand for food, the sector offers opportunities for producers to sustain and improve their livelihood. Unknown to many, Information and communication technology (ICT) plays an important role in addressing these challenges and uplift the livelihood of the rural poor. The sector is confronted with the challenge of increasing production to feed a growing population in a situation of decreasing availability of natural resources. Of concern are water shortages, declining soil fertility, effects of climate change (Muriithi et al, 2009). Although the information and communication technology can expand agriculture in all countries, based on their studies, the researchers found that lack sufficient expertise to use tools related technology has made remarkable results achieved in this area not to happen. it has succeeded in creating smart software technology for farmers, which largely eliminates the complexity. The intelligent software includes a database of details about the plants and their growth requirements, control methods and proper use of them in the database, the co-ordinator of the software with the tastes of user (Rigi et al, 2014).

Muriithi, A. G., Bett, E., & Ogaleh, S. A. (2009). Information Technology for Agriculture and Rural Development in Africa: Experiences from Kenya. Conference on International Research on Food Security, Natural Resource Management and Rural Development. Tropentag 2009 University of Hamburg, October 6-8.

Rigi, K., Farahmand, M., Sheikhpour, S., Moradi, H., & Keshtehgar. A. (2014). The role of information technology in agricultural development. Journal of Novel Applied Sciences. 3(2): 203-205. www.jnasci.org.

Author α: Department of Management, Sanandaj Branch, Islamic Azad University, Sanandaj, IRAN. e-mail: Khazael62@yahoo.com
Author σ: MA in Business administration, ShohadayeGhorve Social Security Clinic.
Author ρ: Ph.D. student, Department of strategic management passive defense.
Author ω: Master of Arts in Arabic Language and Literature, Qurveh Education.

The knowledge of environmental science is compiled with information technology (IT) commonly called Environment Information (EI). Environment information is an easy accessible database; people can know both new research scope and impact on environment. Recent ages are depending on information and technology, which helps to fast, comfortable, luxurious life to human beings. People are now able to cover the distance of months in hours with the help of airways, shorter the duration with the help of cars and motor vehicles and can make cook food quickly in microwaves (Talapatra et al, 2014).

One of the most important goals of contemporary economics is determining the factors that cause economic growth. Traditional neoclassical theory holds that the economic growth of a country is determined by the supplies of both labor and capital the country possesses and the level of technology present in that country (Michael et al, 2008).

The level of technology in a given society is heavily dependent on the level of knowledge in that society; this paper will regard these two factors as essentially the same. The established neoclassical factors of economic growth are thus the levels of capital and labor present in a given society, the level of knowledge (or technology) present in that society, and the extent to which the government of that society pursues pro-market government policies. However, this model ignores any direct effect that entrepreneurship may have on economic growth (Mehrara& Ali Rezaei, 2014).

This is the time when competition n in economy is depended on the innovation and technological abilities of the young. This needs applying the best management models in systems and developing young skills in human resources. One of the strategies for this is applying entrepreneurship by universities themselves. It needs different governors, planners and masters help to create necessary physical situations in which the economical jobs are planned and the graduated students can be employed. The structure experienced in most countries is the growth center of business and technology. There are different approaches about entrepreneurship definition and the concept of this word needs information of interdicipliny approaches. Entrepreneurship, according to its identity and different views of experts such as psychologists, is defined as sociology, economy, industry and even history (Ghayazi et al, 2014).

Entrepreneurship process is called "Creativity destruction". In other words the characteristic of entrepreneurship is doing new works and innovating modern ways in daily life. The modern way is just "Creativity destruction". To his view, entrepreneur is a person who has new and modern idea and by a process of starting and creating a business and accepting the risk, introduces new productions and services to the society. Entrepreneurship is never done without certain pre-needs of business management (recognizing opportunities, preparing resources and creating business activities), so its teaching cannot be done without emphasizing on these pre-needs (Ahmadpoor dariani & Moghimi, 2006).

Entrepreneurship is an ill-defined, multidimensional, concept. The difficulties in defining and measuring the extent of entrepreneurial activities complicate the measurement of their impact on economic performance. Understanding their role in the process of growth requires a framework because there are various intermediate variables or linkages to explain how entrepreneurship influences economic growth. Examples of these intermediate variables are innovation, variety of supply, entry and exit of firms (competition), specific efforts and energy of entrepreneurs, etc (Mehrara& Ali Rezaei, 2014).

Mehrara, M., & AliRezaei, A. (2014). Entrepreneurship and Industry Growth. International Letters of Social and Humanistic Sciences. 31: 27-36. doi:10.18052/ www.scipress.com/ ILSHS.31.27.

Michael, P., Todaro, S., Stephen, C., & Smith, C. (2008). Economic Development. 10th ed. Boston, MA: Addison Wesley.

Ahmadpoordariani, M., & Moghimi, M. (2006). The basic concepts of entrepreneurship. Tehran: Farandisheh Publication.

Ghayazi, S., Omidian, F., & Hosseinpoor, M. (2014). Factors affecting entrepreneurship of educational management students in Andimeshk Payame Noor University. International Letters of Social and Humanistic Sciences. 21: 51-61. doi:10.18052/ www.scipress.com/ILSHS.21.51.

Talapatra, S. N., Nandy, A., & Partha, P. (2014). A Conceptual Approach of Information Technology in Environment Science: Research Area and Prospects of Database Generation. International Letters of Natural Sciences. 15: 8-12. doi:10.18052/www.scipress.com/ ILNS.15.8.

In the current era, the entrepreneurship in the role of an approach to human societies development, prosperity and growth is became an unique alternative that through mobilizes all factors, resources and possibilities of a society spontaneously and by an evolutionary process for meeting the high ideals of community to be the origin of most of positive economic-social effects and consequences. Therefore, as we comprehensively notify the abundance advantageous of this phenomenon, the purposes and Objectives and coordinates of an effective development pattern will be more easily accessible. A subject that should be considered in the regard of entrepreneurship importance and its direct connection with national promotion of a nation is the importance of the role of rural entrepreneurship and entrepreneurs living in rural areas; the matter which along with all its importance is

neglected in our society and not appropriately considered (Fazelbeygi and Yavari, 2009). The subject of entrepreneurship is rapidly expanding and women's entrepreneurship is specially notified all around the world. Most of the researchers believe that entrepreneurship activities of women have significant role in nations' economic health. The women could create great evolutions in countries' economic development in the short time entering to the business field. As statistics show the economic activities of women constitute 25 to 35 percent of whole activities of the world (Kantor, 2002).

II. Statement of the Problem

The environment is an all-embracing concept that is made up of physical, biological and social components. The physical components include the air, housing, weather, water, refuse, sewage, soil, etc. Other physical factors of the environment include chemicals, heat, noise from automobiles and industrial engines, and light. The biological components include plants, pests and animals. While the social components consist of human organizations, cultures, customs and human interaction (Modebelu & Isiwu, 2014).

Mitchell (2009) reported that the earth's natural resources are interdependent and balanced. However, through human activities, this balance and harmony tend to be upset. Population explosion, lack of concern for the environment, urbanization, poor land use and management, municipal and industrial wastes etc, have resulted in overgrazing, over-fishing, over-hunting, deforestation, bad agricultural practice, all of which have combined to deplete the earth's resources, degrade the environment and cause loss of biodiversity.

Mitchell R. (2009). Water Pollution. Microbiology. New York: John Wiley and Sons.

Modebelu, M. N., & Isiwu, E. (2014). Environmental health hazards and rural community development in Abia State of Nigeria. International Letters of Natural Sciences. 20: 129-138. doi: 10.18052/www.scipress.com/ILNS.20.129.

The lives of most rural people are supplied through agricultural activities in and out of the farms. It's essential for improving the rural developing resources to seek the Sustainable welfare of agricultural farmers and workers without farm. Developing the quality of human capital in villages and in the other words, increasing the power of rural society force means social development. This progress itself is the development of rural economy, because the major part of rural economic is up to the agricultural economic. The farmers receive their required technical suggestions and agricultural inputs from public extension system by creating agricultural extension system. This process still continues but the traditional methods of extension and development have restrictions (Jalali, 2006). The rural people always encounter with education problems such as shortages or lack of educational spaces (or opportunities), distance and commuter dimension and etc. through these technologies, most of educational needs of rural society will be highlighted and met and this process will also lead to the educational gaps decrement and finally help the information gaps decrement."The communicational technologies lead to the viewpoint and attitude alteration of social organizations and leisure time activities patterns (Henson & Narola, 2000).

Although entrepreneurship isn't the only approach of job creation and rural people's income increment, but definitely is the best and most productive of its kind. The economists know this matter as the most important factor in village economic development and politicians also know it as a key approach for preventing the villages' riots and disturbances (Klagher & Aghaei, 2014).

According to the available resources and opportunities in rural environments (Potential and actual, as well as software and hardware), this environments guide the development purposes and especially economic development in communities. In the direction of processes and regarding to these environments, an organized linkage has been created among the rural development purposes and entrepreneurship development so that form from the suitable combination of these factors, rural entrepreneurship behaviors in the economic development direction (Rokn-al-din Eftekhari & SajasiGheydari, 2010).

According to the above mentioned contents, it can be declared that the current research is trying to answer this question that "Is there a relationship between information technology and agricultural development and rural people's entrepreneurship?

III. The Importance and Essentiality

In the regard of this research importance and essentiality, it can be illustrated that women are the first hope for their own countries' growth and development in developing countries, especially in rural areas. Nowadays, countries and international organizations have reached this conclusion that entrepreneurship development of women has a direct and positive effect in most of countries various activities. In the one hand, leads to the economic development and job creation opportunities and in the other hands, leads to the social, cultural and health situation improvement of women and their families (Glerd, 2005). Along to the increment in conscious level and academic educations, the position and place of women in families and communities especially local and rural communities have been altered, but still the lack of gender balance and inequalities in supply and labor market rooted in the norms, attitudes and social structures of family and country and remains. Despite this fact, the desire to

entrepreneurs and farmers is a strong desire among women so that nowadays, women business owners play an important role in the health of the economy and villages and in this regard, the innovative trainings in the field of information technology can significantly help the villagers' entrepreneurship development.

In the field of information technology and agricultural development and rural entrepreneurship role, expanded studies were conducted which are referred to following cases:

1. Nicknami (2009) conducted a study as the objectives and approaches of information and communication technology function to develop the agriculture expansion of Iran. The purpose of current study was to determine the suitable objectives and approaches in information and communication technology function to develop the agriculture expansion of Iran. The method of study was correlation and statistic society was also consisted of faculty members in agricultural extension and education sectors of Azad and Public Universities and managers and experts of agricultural extension. Finally, the suitable objectives and approaches of information and communication technology for developing the agriculture expansion of Iran was determined using multi-variable regression method.
2. Morshedi and Kazemi (2013) conducted a study as the role of information and communication technologies role in empowering the rural women of Marvdasht. This study was conducted aiming to survey the role of information and communication technologies role in empowering the rural women of Marvdasht. The results of regression analysis showed that two variables of related information presentation regarding to the Health and family planning and self-reliance improvement of rural women are the most important variables of information and communication technology capabilities which have explained the 16 percent of empowerment changes.
3. Asadi and Hasheminejad (2011) conducted a study as the role of information and communication technology (ICT) in developing the permanent agriculture along with the arrival of the information and communication technology system and world transformation to the Global Village and also the importance of utilizing the electronic power is well revealed for developing countries and governments attempt to use these capabilities to develop and perform their edited and composed programs, therefore using information and communication technology regarding to its role in providing the on time information for quick decision-making of people, information exchanges, quick accessing to the scientific resources and updated low-cost information is increasingly notified. This article tries to survey the role of information and communication technology in rural permanent development through the analytical – case study. It seems that agriculture expansion with educating the villagers in order to increase efficiency and use of ICT services plays a significant role in rural ICT services development. Sarabi et al (2013), conducted an article as survey the effect of social capital and its dimensions on women's entrepreneurship (case study; Association of Women Entrepreneurs), the purpose of this study is to survey the effect of social capital and its dimensions on women's entrepreneurship. The results of the study indicate that there is a positive and meaningful relationship between social capitals with women's entrepreneurship. Legerd (2005), in his article as "the effective factors on Iranian women's entrepreneurship development has evaluated the entrepreneurship development with growth indexes and creating, innovating and effective factors in 4 personal (or individual), organizational, networking and environmental sections, and the achieved results of study show that the role of personal factors in Iranian women' business development is more effective than other factors. Mohedi and YaghubiFarani (2012) in an article as survey and analysis of entrepreneurship development restrictions and obstacles in rural women of Iran reached this conclusion that the restrictions and obstacles of rural women's entrepreneurship in 9 categorizations is as follows: Circumstances and individual characteristics, personality and behavioral rural women, conditions and characteristics of the family, knowledge and skills of rural women (education, experience, communication), cultural, social (community, village) access to the facilities and services needed by rural women (in process setup, administration and business development), legal factors, financial factors and economic factors, institutional, geographical and environmental factors (rural environment) and at the end, they illustrated that one of the major and significant important purposes and objectives in rural women's entrepreneurship development is developing and improving the entrepreneurship culture in rural communities and especially rural women community.Pasaban (2004) in an article as the role of women entrepreneurship in rural development in developing countries achieved this conclusion that women's entrepreneurship development in rural regions requires a set of suitable fields such as attitude changing toward the women presence in the workplace, promote social and economic potential of rural women to own and drawing up appropriate laws and regulations. He also emphasized on the role of rural entrepreneurship in permanent development.

IV. Research Objectives

According to the subject, the current research is trying to achieve to the following objectives:

- ✓ Explore the ability of individual farmers and entrepreneurs in rural women.
- ✓ Identify the fields of diversifying the agricultural activities and entrepreneurship development for rural women.
- ✓ Identify the potential rural women's entrepreneurs in information technology and its relationship with entrepreneurship.

a) Questions

i. *Primary Question*

- ✓ How much is there relationship between information technology and agricultural development and villagers' entrepreneurship.

ii. *Secondary Questions*

- ✓ How much is there relationship between the level of education and use of technology in agricultural development and entrepreneurship?
- ✓ How much is there relationship between the skill of using possibilities and agricultural development and entrepreneurship?
- ✓ How much is there relationship between information technology tools and agricultural development and entrepreneurship?

b) Assumptions

i. *Primary Assumption*

- ✓ There is relationship between information technology and agricultural development and villagers' entrepreneurship.

ii. *Secondary Assumptions*

- ✓ There is relationship between the level of education and use of technology in agricultural development and entrepreneurship.
- ✓ There is relationship between the skill of using possibilities and agricultural development and entrepreneurship.
- ✓ There is relationship between information technology tools and agricultural development and entrepreneurship.

V. Methodology

The methodology is a way to profoundly achieve to the methodical knowledge for theorizing or the purpose of methodology is used techniques and methods to collect and analyze the data (Bliki, 2008, 22). The used research method is progressive analytic - descriptive theses that for analyzing the results and assumption tests, the statistic method with correlation tests were used.

a) Statistic Society

The statistic society of current research is employees Agricultural Jihad Organization of Kurdistan that have activity in the regard of entrepreneurial development and promotion and they are 72 persons which their amount decreased to 60 persons with sample size calculation by Cochran formula.

b) Information collection data

The main data collection tool in this research is questionnaire. In this regard, the questionnaire of information technology role in rural women's entrepreneurship was used. The utilized spectrum in questionnaire was like rt spectrum and questions are designed in 5 options. The questions spectrum was completed to survey the approaches of women's entrepreneurship development from very high to very low. In order to survey the statistical data of current research, at first, the information obtained from questionnaires were extracted and analyzed. For assumption analysis of the study, Pearson correlation test was used. This research was conducted in the Agricultural Jihad Organization of Kurdistan province. This study is cross-sectional which the data collection and distribution of second half of 2016and data analysis was done in first of 2017.The subject of current research is to survey the role of information technology in development of rural women entrepreneurship.

VI. Results

Table 1: The relationship between information technology and entrepreneurship development in rural women

Variables	Number	The amount of r Pearson	Sig
Information technology	60	0.757	0.000
Entrepreneurship development in rural women			

a) Primary Assumption

i. *Assumption H_0 :* There isn't relationship between information technology and rural women's entrepreneurship development.

ii. *Assumption H_1 :* There is relationship between information technology and rural women's entrepreneurship development.

In the regard of research main assumption, the results of Pearson correlation coefficient are shown in table (1). According to the table, the correlation coefficient in the level of $P < 0.05$ is r=0.757 which this coefficient is meaningful (or significant) in the terms of statistics. So regarding to the (sig=0.000) in the Pearson test, the assumption H_0 is not confirmed and assumption H_1 is confirmed; means there is relationship between variables.

Table 2: The relationship between the level of education and use of technology in entrepreneurship development

Variables	Number	The amount of r Pearson	Sig
Level of education	60	0.324**	0.012
Entrepreneurship development			

b) First secondary assumption

i. *Assumption H_0 :* There isn't relationship between the level of education and use of technology in rural women's entrepreneurship development.

ii. *Assumption H_1 :* There is relationship between the level of education and use of technology in and rural women's entrepreneurship development.

In the regard of research main assumption, the results of Pearson correlation coefficient are shown in table (2). According to the table, the correlation coefficient in the level of $P < 0.05$ is r=0.324 which this coefficient is meaningful (or significant) in the terms of statistics. So regarding to the (sig=0.012) in the Pearson test, the assumption H_0 is not confirmed and assumption H_1 is confirmed; means there is relationship between variables.

Table 3: The relationship between the skills of using possibilities in entrepreneurship development

Variables	Number	The amount of r Pearson	Sig
Skills of using possibilities	60	0.403**	0.001
Entrepreneurship development			

c) Second secondary assumption

i. *Assumption H_0 :* There isn't relationship between the skill of using possibilities and rural women's entrepreneurship development.

ii. *Assumption H_1 :* There is relationship between the skill of using possibilities and rural women's entrepreneurship development.

In the regard of research main assumption, the results of Pearson correlation coefficient are shown in table (3). According to the table, the correlation coefficient in the level of $P < 0.05$ is r=0.403 which this coefficient is meaningful (or significant) in the terms of statistics. So regarding to the (sig=0.012) in the Pearson test, the assumption H_0 is not confirmed and assumption H_1 is confirmed; means there is relationship between variables.

Table 4: The relationship between information technology tools in entrepreneurship development

Variables	Number	The amount of r Pearson	Sig
Information technology tools	60	0.452**	0.000
Entrepreneurship development			

d) Third secondary assumption

i. *Assumption H_0 :* There isn't relationship between information technology tools and rural women's entrepreneurship development.

ii. *Assumption H_1 :* There is relationship between information technology tools and rural women's entrepreneurship development.

In the regard of research main assumption, the results of Pearson correlation coefficient are shown in table (3). According to the table, the correlation coefficient in the level of $P < 0.05$ is r=0.452 which this coefficient is meaningful (or significant) in the terms of statistics. So regarding to the (sig=0.000) in the Pearson test, the assumption H_0 is not confirmed and assumption H_1 is confirmed; means there is relationship between variables.

VII. Conclusion

The purpose of this research was to considered information technology as a functional method to develop the entrepreneurship. According to the research results and survey the relationship between research variables, we found out that there is meaningful relationship between information technology and entrepreneurship development. Nowadays, along with the created changes and evolutions in the concept of rural development, the rural development has been considered as a multi-dimensional process that its final purpose is to increase the sexual justice of rural areas residents. In order to achieve this matter, nowadays the Facilitation of rural entrepreneurship process and rural women in particular can be known as an effective strategy. So that it can be asserted that according to the assumption of research and relationship between information technology and entrepreneurship development is sig=0.000 and for the relationship between education level and entrepreneurship development is sig=0.012 which is the highest and lowest level of relationship, respectively. According to the research of Asadiand Hasheminejad (2011), using information and communication technology regarding to its role in providing the on time information for quick decision-making of people, information exchanges, quick accessing to the scientific resources and updated low-cost information is increasingly notified and can be compatible with primary assumption of the research which introduced the role of information technology in

agricultural and entrepreneurship development. According to the research of Mohediand YaghubiFarani (2012), one of the major and significant important purposes and objectives in rural women's entrepreneurship development is developing and improving the entrepreneurship culture in rural communities and especially rural women community and also notifying their special skills and education level in activities and it's compatible with the first and second secondary assumptions. Actually, from the results of current research, the positive conclusion can be concluded in the field of information technology on agricultural and entrepreneurship development and measured the level of education and suitable tools in agricultural and entrepreneurship development and the level of their relationships.

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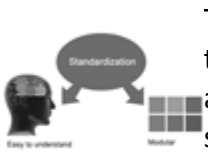

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A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

Tables, Figures and Figure Legends

Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.

Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.

Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

Color Charges: It is the rule of the Global Journals Inc. (US) for authors to pay the full cost for the reproduction of their color artwork. Hence, please note that, if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a color work agreement form before your paper can be published.

Figure Legends: Self-explanatory legends of all figures should be incorporated separately under the heading 'Legends to Figures'. In the full-text online edition of the journal, figure legends may possibly be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should notify the reader, about the key aspects of the figure.

6. AFTER ACCEPTANCE

Upon approval of a paper for publication, the manuscript will be forwarded to the dean, who is responsible for the publication of the Global Journals Inc. (US).

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The corresponding author will receive an e-mail alert containing a link to a website or will be attached. A working e-mail address must therefore be provided for the related author.

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(Free of charge) from the following website:

www.adobe.com/products/acrobat/readstep2.html. This will facilitate the file to be opened, read on screen, and printed out in order for any corrections to be added. Further instructions will be sent with the proof.

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

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- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.

- Do not give permission to anyone else to "PROOFREAD" your manuscript.

- Methods to avoid Plagiarism is applied by us on every paper, if found guilty, you will be blacklisted by all of our collaborated research groups, your institution will be informed for this and strict legal actions will be taken immediately.)
- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

Criterion for Grading a Research Paper (Compilation) by Global Journals Inc. (US)

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

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