World Journal of Information and Knowledge Management
ISSN: 2960-012X
DOI: https://doi.org/10.61784/wjikm3020

QUALITY OF TERTIARY EDUCATION AMIDST POPULATION POPULATION GROWTH: CHALLENGES AND OPPORTUNITIES IN ZAMBIA

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Abstract: Lack of quality tertiary education is often highlighted as one of the main factors hindering the development of African countries. Most of southern African countries and Zambia in particular exhibit the lowest literacy rates and additionally account for half of out-of-school children globally. Despite gradually implemented reforms, these countries still face numerous challenges and do not meet global standards in some instances. Although a good number of articles referring to education in this area has been growing in recent years, few have dealt with quality education at the tertiary level amidst population expansion considering both challenges and opportunities. This area remains fragmented and do not provide a synthetic analysis of the main factors shaping education in the region. This article addresses this gap. Based on an analysis of a selection of existing research evidence, statistics and reports, this study delivers a holistic analysis of education systems in Zambia in the midst of population expansion. In this study of population expansion in relation to education, we have challenges as well as opportunities. This study contributes to a better understanding of Zambian education as one of the critical factors in the social and economic development of Zambia and other parts of Africa.
Keywords: Tertiary education; Population growth; Educational quality; Access to education& educational policy

1 INTRODUCTION

There is a consensus among scholars that one of the main factors hindering the development of African nations is the lack of accessible, universal and quality education systems in the light of population expansion. Sub-Saharan countries exhibit adult high literacy rates ranging from about 60% to just 20%.
Key Factors Hindering the Development of Education… 335 UNESCO, 2014). Existing studies show that despite gradually implemented educational reforms, African educational systems still face numerous challenges and some few opportunities in order to reach global standards [1].
The social and economic effects of population growth are major concerns of policy makers, planners, researchers and analysts in developing countries. The issue they face is how to make use of severely limited resources to provide for the needs of a rapidly growing population. One of those needs is education. The urgency of providing adequate schooling is all the greater given disappointing performance over a number of years entailing a growing gap between targets specified in development plans and what is actually achieved. The gap reveals a growing inability on the part of many developing countries such as Zambia to maintain the quality of education, let alone the scope of provision required. This research examines these issues in Zambia, focusing particularly on problems as well as opportunities emanating from a rapidly growing population.
Zambia has had about six population censuses. The first, taken in 1963 before independence, put the country's population at 3,490,170, to about 4.1 million while the third, in 1980, registered a total of 5,661,801. In 1990 population came to about 7.4 million people and in 2000 the population was about 9.9 million. The most recent estimate 2022 puts the figure at 19.6 million people. In comparative terms Zambia is one of the most sparsely populated countries in sub-Saharan Africa. Given an area of 752,972 square kilometres, the population density increased from five persons per square kilometre in 1963 to 7.5 in 1980. This is extremely low when compared with Malawi and Zimbabwe, which had about 40 persons per square kilometre, or Nigeria with over 80. But even if these figures may suggest that Zambia is relatively under populated, the country is not free from concern about population, for it is characterised by a population growth rate which, estimated in 1988 to be 3.7%, is one of the highest in sub-Saharan Africa and was surpassed only by Kenya, Cote d'lvoire and the Congo, which had registered between 4.0 and 4.6 per cent.
What makes Zambia's population particularly problematic is that close to half of it is below the age of 15 years. Projections relating to the period from 1990 to 2000 suggest that the population in the age group 7 to 15 years will increase by 1,103,535 by the latter date. This will be predominantly felt in those regions along the line-of-rail. It is here that the nation's large cities and towns are located, which, together with Provincial and District Centres, account for some 43 per cent of the population, making Zambia the third most urbanised country in sub-Saharan Africa after Algeria and South Africa. The concentration of so many in the urban areas has contributed to a gross inequity in the planning of development and

provision of services through the diversion of resources from the rural areas to meet the requirements of the urban sector (Figure 1).

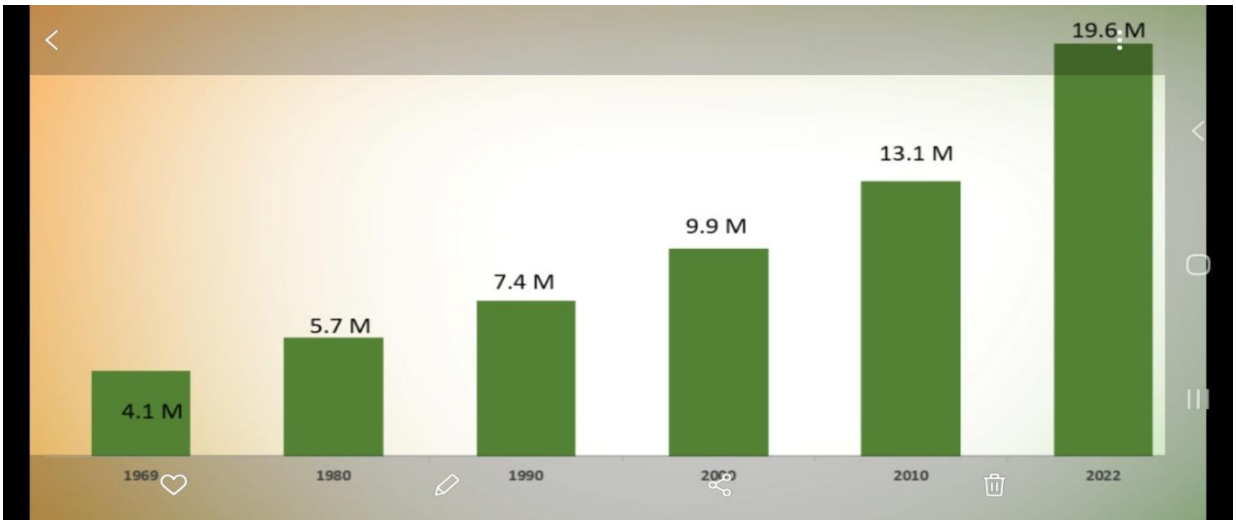

Figure 1 Showing Number of People During Different Decades of Census

1.1 Historical Context of Education in Zambia both Secondary and Tertiary Education

At the time of independence from Great Britain on 24 October 1964, Zambia inherited an exceptionally weak educational profile. There were about 100 university graduates and under 1,000 who had completed secondary school. The educational system was woefully inadequate to meet the challenges of the post-colonial state. All but a few schools were run by Christian missionaries whose paltry and modest budgets did not allow large enrolments. There were few trade schools or teacher training colleges and no universities. The school system such as it existed was closely patterned on the British Grammar School and segregated by race. European children had the best schools, followed by Asian, Colored and, finally, African children. This arrangement was a reflection of the colonial political economy, influenced by South Africa, in which racial segregation was a commonly accepted feature of life. The new African government had no alternative but to take drastic measures in educational policy.

The first major attempt at reform involved the passage of an Act in 1966 aimed at addressing the obvious anomalies in the educational sector. Among other things the Act empowered the government to abolish racial segregation in schools, introduce non-fee paying registration in mission-controlled and public schools via government assistance with student tuition, boarding fees and teachers' salaries, 'nationalize' mission schools which now became 'aided' schools and abolish Cambridge Higher School Certificate (Form Six) programmes. The latter provision enabled ordinary level school certificate holders to enter the newly established University of Zambia.

These measures permitted rapid expansion of the public school system so that by 1969, each of the fifty districts in the country had a secondary school. Marked expansion in school enrolment continued over the next decade, as primary level enrolments rose from 378,000 in 1964 to 810,000 in 1973, and those at secondary level from 13,850 to 65,750. Technical and vocational training colleges enrolled about 3,000 in 1973 as against none at all in 1964. Enrolment at the University of Zambia grew from 312 in 1966 to 3,000 in 1973.

These developments were made possible by a favourable economic climate. Copper, the country's major export, contributing about forty per cent of government revenue and ninety-eight per cent of the country's foreign exchange earnings, was fetching a very high price on the London Metal Market. From 1973, however, this picture began to change as the oil import bill started to rise, while revenue from copper began to dwindle with the fall of the world price.

Technical Educational and Teacher Training Between 1975 and 1983, enrolment in the technical education sector (trades schools, technical colleges and Zambia Institute of Technology and Evelyn Hone College of Applied Arts) rose from 5,421 students to 6,211. At the same time the cost per student increased from Kl,233.35 to K2,242.58. Recurrent expenditure rose from K6.9 million (about 8.9 per cent of the education budget) to K13.95 million (6.2 per cent), but this entailed a slight decline of 2.7 per cent in real terms. Nor did capital expenditure keep pace with the increases in student numbers. There was an increase from K3.17 million in 1975 to K3.64 million in 1976, but then a drop to K3.47 million in 1977. From 1978 there was a sharp decline which bottomed out in 1981 when the expenditure was just K0.005 million. This was increased to K6.72 million in 1982, but fell again to K2.06 million in 1983.

In spite of the fluctuations, however, technical education has become established on a reasonably sound footing, yielding skilled individuals whose presence has contributed considerably towards decreasing the skills shortage in junior secondary school as well as in producing artisans and technicians in a variety of fields.

Education is a key investment in human capital. It helps a person to achieve and apply his/her abilities and talents. In developed countries in the process of determining wages, intellectual capabilities are much more important that physical (abilities), when great majority of people is concerned. The school system in the majority of world countries is employed to essentially reproduce class structure; for example, the graduates from the best schools earn significantly higher wages than those from inferior institutions. The high quality of education is the best guarantee for the capability to acquire new skills and knowledge. Precondition for investing and spending money on education and healthcare, either by a private person or by the state, rests on a belief that in this way one increases the income and productivity in the long run.

2 LITERATURE REVIEW

The following sections of the paper shall, therefore, review the literature on the quality of tertiary education amidst population growth relating to the historical background, ecological and socio-economic contexts, and interrelatedness in its scope in Zambia. First, it integrates empirical studies on quality tertiary education that show the practice's strengths and weaknesses to understand its features comprehensively in modern education conditions from different viewpoints. The implications of population growth differ considerably among developing countries. Countries where education levels are already high, where much investment in education and communications systems is in place, and where political and economic systems are relatively stable, are well equipped to cope with rapid population growth. This is true whether or not their natural resources are limited or their countries already "crowded," as in the fast-growing East Asian economies such as Hong Kong, Korea, Singapore, and more recently Malaysia and Thailand. But these tend also to be countries where population growth is now slowing. Countries with untapped natural resources could in the long run support more people. But rapid population growth makes it hard for them to develop the human skills and administrative structures that are needed to exploit their resources. In Brazil, Ivory Coast, and DRC Congo, for example, the development of unused land will require large complementary investments in roads, public services, and drainage and other agricultural infrastructure. Natural resources are not by themselves sufficient (or even necessary) for sustained economic growth.

Education concerns not only the quantity of schooling—the percentage of the population that completed primary, secondary, or tertiary education—but also, critically, its quality. Hanushek and Kimko (2016) [2], for example, find that it is not merely years of schooling but the quality of schooling (which may be reflected in international examinations) that has a significant relationship with economic growth. Pavlova noted in her email communication that when The World Economic Forum measures secondary and tertiary enrolment rates, their measurement also includes training and the quality of education as evaluated by business leaders and the extent of staff training.

The more years scholars have studied have noted that there has been major progress in education access, specifically at the primary school level, for both boys and girls. However, access does not always mean quality of education, or completion of primary school. Currently, there are more youths worldwide who still lack basic literacy skills, and more than 50 per cent of them are girls and women.

Hanushek et al (2016) review the role of education in promoting economic growth [2], with a particular focus on the role of educational quality [3]. It concludes that there is strong evidence that the cognitive skills of the population – rather than mere school attainment – are powerfully related to long-run economic growth. The relationship between skills and growth proves extremely robust in empirical applications. The effect of skills is complementary to the quality of economic institutions. Growth exparts reveal that the long-run rewards to educational quality are large but also require patience.

The focus on human capital as a driver of economic growth for developing countries has led to undue attention on school attainment. Developing countries have made considerable progress in closing the gap with developed countries in terms of school attainment, but research has underscored the importance of cognitive skills for economic growth. This result progress has shifted attention to issues of school quality, where developing countries have been much less successful in closing the gaps with developed countries. Without improving school quality, developing countries will find it difficult to improve their standards in education and economic performance [3]. Spending on education is becoming more of a priority worldwide but what is important is quality at all levels; primary, secondary and tertiary.

An influential early study which analysed the effects of primary education on agricultural production in 13 countries found that the average annual gain in production associated with four years of schooling was 8.7% (Lockheed, Jamison and Lau, 1980). A more recent paper by de Muro and Burchi examined the relationship between primary education and food insecurity across 48 countries [5]. The results showed that doubling the attendance rates in primary education for rural populations would reduce levels of food insecurity by between 20% and 24%. Some papers which measured the effect on income of the quality of education showed that these are higher than previously understood [5].

The incidence of poverty across households is closely linked to educational attainment [6]. For example, a study found that in Papua New Guinea, people living in households headed by a person with no formal education constitute more than 50% of the poor while in the Republic of Serbia, the poverty level of households where the head has no schooling is three times higher than the national average.

Basic education also impacts on poverty reduction and hunger. The feeding and body weight monitoring provided in many early childhood programmes can directly alleviate malnutrition while research based on the International Adult Literacy Survey has shown that adult literacy programmes can raise earnings potential at a similar rate as additional years of

schooling. The case of China has shown during the past twenty years that combating illiteracy aggressively is possible and can provide governments with the incentive for moving their citizens towards economic sectors with higher productivity.
As regards social returns, with few exceptions recent studies have confirmed the significant positive association between schooling, and productivity and economic growth. Other studies have looked at the positive spillover effects beyond education's impact on the growth of gross domestic product (GDP) — effects that are not normally taken into account. The greater productivity of individual workers has also been found to enhance the productivity of co-workers, while higher levels of worker education facilitate the discovery, adaptation and use of more efficient production processes. Mingat and Tan concluded that rates of return varied not only by level of schooling but also by level of development [7]. For low-income countries, primary education was the best investment, while in middle-income countries, where primary education already tends to be more widely available, increased investment in secondary education yielded the highest social returns. Among high-income countries, returns were greatest for tertiary education. This suggests that in low-income settings, primary education deserves priority in the allocation of resources. The World Bank has argued that, based on such evidence, many countries have misallocated spending between education subsectors, with a disproportionate share of resources going to secondary and university education.
Social change and long-term prospects for economic growth rely considerably on the expansion of quality learning opportunities for all. Greater equity in both education enrolment and school quality across all population groups will result in a more equal income distribution and reduce socioeconomic inequalities in general.

3 DATA COLLECTION METHODS

To ensure a comprehensive understanding of the quality of tertiary education amidst population growth, data will be collected using the following methods:

3.1 Qualitative Methods

3.1.1 Semi-structured interviews

Structured interviews were conducted with Quality assurance under Higher Education Authority, Educational planners, Higher Learning Institutions' administrators, lecturers and students. The interviews sought to establish an appreciation of quality education in the midst of population expansion with regards to opportunities and its challenges as in the case of Zambia.
Lecturers, administrators and students were interviewed to conduct focused discussions to enhance their understanding of quality education and the opportunities challenges that come by it. This approach allows the researcher to obtain different views on the opportunities and challenges of population growth as regards to quality education.

3.1.2 Observational field visits

In this case, the researcher physically visited some higher learning institutions to make balanced observations and assessments. The number of students in class, the nature of infrastructure, the way lectures are conducted and the content being offered. In this way, it helped to have further interviews and other ways of getting quality data, to assess and determine the opportunities and challenges that arise in the process as we pursue quality education in the midst of population growth.

3.2 Quantitative Methods

3.2.1 Surveys and questionnaires

Structured interview schedules were used to administer the selected officers from HEA, lecturers and students with questionnaires. The questionnaire quality of infrastructure required for a higher learning institution to be in operation, the number and nature of courses required for certain programs of study to be considered complete, the nature and number of assessments and tests/exams offered to students per semester or per term, finally how much is being charged per student in the period of study not forgetting the highest qualifications lecturers have. This data will enable the use of statistical parameters to determine the relationship between Population growth and quality of tertiary education.

4 DATA ANALYSIS

To ensure a comprehensive and in-depth understanding of the collected data, a mixed-methods approach to data analysis was employed. This approach allowed for the triangulation of findings, increasing the validity and reliability of the research conclusions. The data analysis process involved the following techniques:

4.1 Qualitative Data Analysis

The qualitative data gathered through interviews, document analysis, and case studies were analyzed using thematic analysis. This process involved familiarization with the data, generating initial codes, searching for themes, reviewing and refining

themes, and defining and naming the themes. Thematic analysis enabled the identification of patterns and relationships within the data, providing insights into the factors influencing quality education in the midst of population growth.

4.2 Quantitative Data Analysis

The quantitative data collected through surveys were analyzed using descriptive and inferential statistics. Descriptive statistics, such as frequencies, percentages, and measures of central tendency, were used to summarize and describe the data. Inferential statistics, such as correlation and regression analysis, were used to explore relationships between variables and test the research hypotheses. The quantitative analysis was carried out using appropriate statistical software.

4.3 Integration of Findings

The findings from the qualitative and quantitative data analysis were integrated to provide a comprehensive understanding of the research topic. This process involved comparing and contrasting themes, identifying patterns and relationships across the data sources, and triangulating the findings to enhance the overall validity and reliability of the research conclusions.
By employing a mixed-methods approach to data analysis, this study generated a comprehensive and nuanced understanding of quality education in the period of population explosion, ultimately contributing to the development of a design model that addresses the diverse needs of learners and employers while remaining adaptive to the evolving business environment.

5 VALIDITY AND RELIABILITY

The purpose of this research report is to provide a comprehensive overview of the research methodology employed in a study on the quality tertiary education in the midst of population growth particularly in Zambia with considerations on its opportunities and challenges. This report focuses on the strategies used to enhance the validity and reliability of the research findings and discusses the ethical considerations taken into account to protect the rights and well-being of the research participants.

5.1 Validity

Validity refers to the accuracy and soundness of the research instruments and methods in measuring the concepts and phenomena under investigation. The following strategies were employed to enhance the validity of the study:

5.2 Triangulation

Multiple data collection instruments, including interviews, surveys, focus group analysis, and case studies, were used to gather diverse data. This approach allowed for a comprehensive understanding of the research topic by comparing and contrasting different sources of information.

5.3 Member Checking

Participants were provided with a summary of the research findings to verify the accuracy of their perspectives and experiences. This process allowed for the identification and correction of any potential misinterpretations or inaccuracies in the data.

5.4 Expert Review

The research instruments and methods underwent review by experts in the field of education to ensure their appropriateness and validity.

5.5 Clear Conceptual Framework

The study was guided by a well-defined conceptual framework, ensuring alignment and coherence among the research questions, objectives, and methods.

5.6 Reliability

Reliability concerns the consistency and dependability of the research findings. The following strategies were employed to enhance the reliability of the study:

6 STANDARDIZED DATA COLLECTION

Standardized procedures were implemented for data collection, such as using structured interview guides and consistent survey administration. This minimized potential sources of error and bias.

6.1 Detailed Documentation

The entire research process, including the development of research instruments, data collection procedures, and data analysis techniques, was thoroughly documented to ensure transparency and replicability.

6.2 Training and Pilot Testing

Interviewers and survey administrators underwent training in appropriate data collection techniques, and the research instruments were pilot-tested to ensure their reliability. Any potential issues were identified and addressed before the main data collection phase.

6.3 Systematic Data Analysis

The data analysis process followed clear and systematic procedures, including the use of coding schemes and statistical techniques, to ensure the reliability of the research findings.

6.4 Ethical Considerations

Ethical principles were adhered to throughout the research process to protect the rights and well-being of the participants. The following principles were considered:

6.5 Informed Consent

Participants were provided with information about the purpose, objectives, and methods of the study. They were informed of their right to withdraw from the research at any time without negative consequences. Written informed consent was obtained from each participant before data collection commenced.

6.6 Confidentiality and Anonymity

Participants' personal information and responses were kept confidential. Any identifying information was removed from the data, and the findings were presented in a manner that ensured the anonymity of the participants.

6.7 Minimizing Harm

Research methods and procedures were designed to minimize potential harm or discomfort to the participants. The researcher was sensitive to the participants' needs and concerns, and efforts were made to address any issues that arose during the research process.

6.8 Honesty and Transparency

The researcher maintained honesty and transparency throughout the research process, including the acknowledgment and addressing of any limitations, biases, or potential conflicts of interest.

6.9 Data Storage and Handling

All data collected during the study were securely stored and handled in accordance with relevant data protection regulations and institutional policies. Access to the data was limited to the research team, and electronic data were stored on secure, password-protected devices.

6.10 Ethical Approval

The research underwent review by the relevant institutional review board or ethics committee before data collection commenced. Any amendments or modifications to the research plan were also submitted for ethical review as required.

7 LIMITATION OF STUDY

7.1 Scope of Study Area

The study will only cover Lusaka District, and therefore, the results attained in this research may need to be more conclusive than those of other regions being involved in education. Data Reliability: Some respondents may not wish to tell the truth, due to the nature of their work etc., to avoid embarrassment or simply because they value their privacy.

7.2 Expected Outcomes

The study expects to:
(1) Offer data regarding the quality of tertiary education amidst population growth looking at both opportunities and challenges
(2) Introduce what quality education is and focus on its effects on socio-economic advantages and disadvantages, or challenges and opportunities but mostly point out whether it is useful and disadvantageous with regard to quality education in the season of population growth.
The more years' scholars have studied have noted that there has been major progress in education access, specifically at the primary school level, for both boys and girls. However, access does not always mean quality of education.
This research method provides a rich and comprehensive focus on quality tertiary education in the midst of population expansion. It switches between the relationships and perspectives to identify its possibilities for mitigating challenges that come by because of population growth.

8 THEORETICAL FRAMEWORK

This academic study focuses on the Quality of Tertiary Education amidst Population Expansion in Zambia. In assessing the profitability of quality tertiary education against the challenges of rapid population growth. The theoretical framework uses several theories and models in cross-discipline fields.
According to scholars, the definition to the concept of higher education quality assurance as a complete system, in this definition, the concept of higher education quality assurance involves about six major things:
(1) Quality system. Quality system is the basis of the quality assurance, it refers to the higher education quality assurance in order to ensure implementing the required sum of organization structure, procedures, processes and resources. There can be no quality tertiary education without quality system being put in place.
(2) Quality policy. Quality policy is a document that outlines an organization's quality goals, quality of purpose, standards, and school direction, is an important part of the goal of higher education. It is to promise the quality of government, society and students, is also the guide of all departments and disciplines within the school and the teachers and students staff.
(3) Quality management. Quality management refers to a determination to have the quality policy to implement quality control and improvement of all management activity. It is the core part of the university's internal quality assurance. You cannot have a system that works without a proper management. This is the reason why many countries fail to have quality tertiary education. They have all things in place but lack proper quality management.
(4) Quality supervision. Quality supervision is an important part of the university internal quality assurance, of the state of the university. Education is about continuous monitoring and analysis. Hence the need for supervision.
(5) Self-assessment. This is about assessment of one's own education quality in colleges and universities. The measure of value judgment, general situation and construction of disciplines involved in college education and management, is not only the importance of university internal quality assurance measures, is also an important part of the external quality assurance and composition.
(6) Quality certification. Quality certification on the basis of school self-evaluation and peer evaluation, according to a certain gain social acceptance in the eligibility criteria whole managerial level, level of disciplines in colleges and universities to confirm. The government's role of quality certification mainly reflected on the recognition of accrediting agency, this approach effectively mobilized the university autonomy and self-discipline.
There are many theories that govern quality education in tertiary institutions such as:

8.1 Total Quality Management Theory

Total quality management is a kind theory that became popular in the early 1960s, as compared to modern quality management methods. Range of quality management, from design to sales and service of all factors affecting the quality of each part. Participation and the quality management is the management of the whole work process. Total quality management theory for the development of higher education quality assurance activities greatly influence higher education mainly from the following several aspects to reference and application of total quality management. Higher education quality management is a process of constant pursuit of excellence in colleges and universities. The focus of the higher education quality management is quality continuous improvement. This requires implementation of total full quality management and comprehensive.

8.2 Education Evaluation Theory

Education evaluation is a major means of higher education quality assurance. Education evaluation theory development up to now, has experienced from a subjective evaluation to measure to the development of science and the evaluation process. It is a systematic process for gathering, analysing and interpreting data to assess the effectiveness of educational programs curricula and learning experiences. It helps educators understand whether their teaching methods, materials and objectives are achieving their intended results Evaluation is key to maintain quality education. At present, there are many representative of education evaluation theory. Objective evaluation, such as: behavior decision-making evaluation, system analysis and evaluation, the goal of free evaluation, response and evaluation. Education evaluation is a reference to the existing education goal, through the system to collect information, take a scientific approach to people and things in education activities in the process of comprehensive value analysis, and judgment.

8.3 System Science Theory

Systems theory in education is a scientific theory that views an education system as a unified organization made up of interrelated parts, and that the actions of any part affect the whole. System as the research object, carries on the discussion and to produce new scientific theories. Including system theory, information theory, cybernetics, mutation theory, the dissipative structure theory, synergy theory and so on according to Henry M. (2013) [8]. To improve the quality of higher education, it is necessary to improve the level of all the elements of higher education system. Elements affecting the quality of the key link, set up to prevent degradation of long-term mechanism, is the effective way to improve the quality of higher education. JB. Wang (2012) Systematically [9]. Higher education is a subsystem of social system, government and society should establish the corresponding mechanism system of institutions of higher learning shoulder the responsibility, to improve the quality of education and supervision; And higher education is a relatively independent academic system, made up of different types of higher education subsystem, in its work consciously and actively integrated into the society, at the same time, must follow the rules of the development of education itself and the basic characteristics of academic organization. The different levels of higher education system structure to the development of higher education system play a different function, therefore, to guide all sorts of different levels and types of the coordinated development of higher education, it should establish different quality evaluation system and evaluation standards.
Systemic goals, organization framing, school environment and time use with the qualification of teachers are part of this theory. Each of this part affects the whole.

9 DISCUSSION

This study's section discusses the outcomes of the research undertaken in the context of quality tertiary education amidst rapid population growth considering challenges and opportunities.
Positive effects of population growth on economic development
Sometimes population growth has positive effects on societies. These include economic benefits such as expansion of taxes and increased consumer spending at local business level, as well as innovations by cultures seeking to keep up with growing populations.

9.1 Increased Invention and Innovation

Those who oppose Population growth often have emphasized on the burden on resources. For instance, high-yield crops were developed to increase food production largely in response to growing populations. Scenarios where technological innovations generate net negative impacts may be associated with a limited technological stock as well as a limited human population at equilibrium and the potential for collapse. By innovation we can increase the production which is helpful for sufficient population. Population growth require higher production encourage innovation in technology. According to the researcher, this position works well in collaboration with education because innovation is all about education. A well-educated population is an innovative population hence economic growth. This paper is looking at quality tertiary education amidst population growth

9.2 Growing Population Increase the Need for Laborers in the Market

Labour is an important tool for higher productivity. Population provide large number of labour. Laborers are necessary tools and implements. This has always and still is the greatest productive asset of nations. A growing population leads to an increase in total output. The sheer arithmetical increase in population creates work as well as incentives for production that impacts upon output and productivity quite favorably. an increasing population means an increase in the number of working population who can function as active participants in the process of economic growth and development. In inverse proportion, we are told that where there is a large population, the work for production is always made easy. However, this works well when the masses are educated. Lack of education makes a large population to be a burden and a menace for leaders. In fact, they can end up destroying the limited resources they have as a case for Zambia. Quality tertiary education is an answer for this challenge.

9.3 Help to Grow the Market Base

Growing population means a growing market for most goods and services and we know that division of labour is limited by the extent of the market. This may also bring about an increase in foreign exchange. A potentially expanding market may stimulate entrepreneurs to invest more and more in capital goods and machinery. Business activity will be spurred as a consequence. And more income and employment will be created in the process. Moreover, it will provide an outlet for the products of efficient, large scale, mass- production industries. The net effect may be favourable to the country and affect every aspect of the country touching even the grassroots.

9.4 Increase in Working Population Increases Productivity

It has been proven that population growth has been a favourable factor in stimulating growth in many countries. Even in the USA, in the 1930s, was apprehended that a slowing down of the rate population growth would lead to long run stagnation. For a developed country, high rate of birth rate helps in innovation and increase in production even in technological issues.

9.5 Large Population is Helpful for Sustainable Development

Such as population size and growth rates, distribution patterns, migration and urbanization trends have a direct impact on many other areas of development, particularly human resource development. Increasingly, countries are focusing on the development of human capital which is through quality education, including the provision of adequate infrastructure, housing, health and education facilities, potable water and food, job creation and the management of key natural resources, among others. Policy makers must be able to balance population growth and distribution factors not forgetting education, for example, with available resources if development strategies are to become reality. Population is one of the fundamental building blocks of sustainable development, along with resource management and environmental care-taking, the development of adequate social services, and the building up of viable industrial and agricultural infrastructures. All of these factors interact with and influence the others. Ultimately, population factors interact with consumption patterns and the level of technological development to influence a society's total impact on resources and the environment. They are among the most important investments any country can make, bearing directly on many areas of development, as mentioned previously. Those Third World countries with the fastest economic growth rates - for example, Thailand, Malaysia, Singapore, China, Indonesia, Costa Rica and Tunisia - have all established effective reproductive health and family planning programme. These things have helped to stabilize the country. However, quality education is key in this matter. Population growth require infrastructure facilities need adequate social services which resulted into sustainable development in developed country.

9.6 Population Growth has Positive Effect on Communication and Transportation

Rapid population growth rate could cause a positive effect on communication and transportation. Transportation plays an important role in economic development. A good transportation system can help reduce transportation cost and travel time. Along with high population growth rate, the increase in population density is inevitable. A dense population is likely to pressure the government to develop more in transportation system such as railroad, highways and road.
population government have to develop facilities economic development

9.7 A Growing Population Help to Increase Per Capital Income

Per capita income is a measure of the average income earned by each person in a specific area over a given year.
Increasing population means an increase in demand for goods and services. If there are proper plans in place to convert the increasing population into a formally employed population, that would bring about positive changes to the economy in terms of increasing per capita income, thus economic growth. And it would likely to covert in economic development.

10 CHALLENGES OF POPULATION GROWTH

10.1 Brings about Economic Insecurity

Population growth is seen as a major cause for economic insecurity and poor health care. Furthermore, rapid population growth may defeat efforts to combat poverty and hunger and to improve services, as increasing numbers of people put serious pressures on the economy and society of poor nations.

10.2 It Brings about Decline in Social Infrastructure

A welfare state line India is pledged to meet social needs of the people adequately and for this, the government has to spend a lot on providing basic facilities like education, housing and medical aid. However, rapid increase in population make burden all the heavier.

10.3 Rapid Population Growth Creates Food Insecurity

Increased population means more mouths to feed which, in turn, creates pressure upon available stock of food. This is the reason, the under-developed countries with rapid growing population are generally faced with a problem of food shortage. Despite all their efforts for raising agricultural production, they are not able to feed their growing population. Food scarcity effects economic development in two respects. Firstly, inadequate supply of food leads to undernourishment of the people which lowers their productivity. It further reduces the production capacity of the workers, secondly; the deficiency of food compels to import food grains which places as unnecessarily strain on their foreign exchange resources.

10.4 It Brings Challenges on the Environment

Rapid population growth leads to the environmental change. Rapid population growth has swelled the ranks of unemployed men and women at an alarming rate. Due to this, a large number of people are being pushed in ecologically sensitive areas such as hill sides and tropical forests. It leads to the cutting of forests for cultivation leading to several environmental changes. Besides all this, the increasing population growth leads to the migration of large number to urban areas with industrialization. This results in polluted air, water, noise and population in big cities and towns. Human overpopulation is among the most environmental issues, silently aggravating the forces behind global warming environmental pollution, habitat loss, the sixth mass extinction, intensive farming practices and the consumption of finite natural resources.

10.5 Rapid Population Growth Increases Poverty and Inequality

Poverty and income inequality are the direct as well as indirect result of high population growth. growth of population is largely responsible for the perpetuation of vicious circle of poverty in underdeveloped countries. On account of rapid growth of population people are required to spend a major part of their income on bringing up their children. Thus savings and rate of capital formation remain low, reduction in per capita income, raise in general price level leading to sharp rise in cost of living. No improvement in agricultural and industrial technology, shortage of essential commodities, low standard of living, mass unemployment etc. As a result the entire economy of an underdeveloped country is surrounded by the vicious circle of poverty. Thus rapid population growth is one of the important problems of Zambia which increases the ratio of poor people. Poor are becoming more poorer and rich are becoming more richer. Hence, it easily encourages inequality in income, too.

10.6 It lowers Living Standards

The standard of living is determined by their per capita income. The factors affecting per capita income in relation to population growth equally apply to the standard of living. The increase in population leads to an increased demand for food products, clothes, houses etc., but their supply cannot be increased due to the lack of cooperate factors like raw materials, skilled labour and capital etc. The cost and prices rise which raise the cost of living of the masses. This brings the standard of living low. Poverty breeds large number of children which increases poverty further and vicious circle of poverty. Thus, the consequence of population growth is to lower the standard of living.

10.7 Inadequate Infrastructure in Tertiary Institutions

Rapid population growth leads to insufficient infrastructure and dilapidated places for learning. Accessing quality education is very difficult. This leads to an increase in student teacher ratio which destroys the aim for quality education.
Kress observes that technology also changes what students do in the classroom and therefore the need to readjust the education to equip colleges and Universities with necessary technological apparatus to promote e-learning. In contrast to the times when students had to go to a library to look up information in dusty reference books, today's students can access almost any type of needed information instantaneously at any time using the internet and other information communication technologies (ICT) [10]. As such Kress argues for the modernization of education by equipping it with necessary technologies. It, therefore, follows that effective teaching can only take place where there is adequate and appropriate infrastructure. This is because infrastructure has a strong influence in the teaching and learning processes. According to Crampton, expansion and success of education relies on infrastructure which affects the quality of the learning environment and students‟ achievement.
College management officers and Teaching Council inspector revealed that the state of infrastructure in some colleges of education was good. Some of the college management officers stated that their colleges had the right infrastructure to

support learning. Some others revealed that their colleges were still in infancy as most of the necessary infrastructure was still being put in place, further expressing optimism that the institutions would soon improve.

11 CONCLUSION

It has been established that this paper researches on the quality education amidst population growth: opportunities and its challenges. By doing some t-tests, we can conclude that positive and negative effects of population growth like increase in labour Market, increasing population ensures increase in the labour force. Lack of growth in the labour force will make a country static, retarded and gets to equilibrium at less than full employment level of the economy. Large Market: Investors would like to invest in a country with a large population. As the population continues to grow so will be the growth in demand for food, shelter, clothing etc. and on other side there are so many negative effect of population like Low Per capita income if production level does not increase, Increase in imports, which will result to balance of payments deficit, shortage of food, Difficulty in educating the children, Underutilization of Labour in developing country.
The key to having stable population is striving to have quality tertiary education.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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