

BUILT- OPERATE- TRANSFER (BOT) MODEL FOR PUBLIC UNIVERSITIES IN GHANA FOR ACCELERATING INFRASTRUCTURAL DEVELOPMENT.

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ABSTRACT

At independence, many countries look to reform education to accelerate economic and social development. Ghana is no exception, and after independence government saw in education the keys to social and economic development. Quality and availability of school infrastructure is one of the numerous problems confronting Ghana's education delivery. The purpose of this research is to find out infrastructure delivered by the private sector in our state Universities. The main objectives of this study were to assess the effectiveness of public private partnership in infrastructure development at the state public universities in Ghana, and also find out the number of infrastructure undertaken by the private sector; and to find out which of the PPP model is appropriate for the development of infrastructure in the state public universities. Data will be collected using the Delphi and field questionnaire survey. The Structural Equation Modeling (SEM) and Nvivo will be used to analyze data from the field questionnaire survey and Delphi respectively. This is a preliminary survey study on an ongoing Ph.D. study.

Keywords: Infrastructure; Public Private Partnership; Public Universities; Model; Ghana

1.0 INTRODUCTION

1.1 Background

Appreciation of the critical role of relevant and quality education in national development has never been lost on Ghana since its days of pre-independence, as captured in one of the addresses delivered by its first president Dr. Kwame Nkrumah to the Legislative Assembly two days before the declaration of Ghana's independence: "...only with a population so educated can we hope to face the tremendous problems which confront any country attempting to raise the standard of life in a tropical zone"(McWilliam and Kwamena-Poh, 1975, p.94). Education is the key to accelerate social and economic development of a country. Ghana is one country which has taken this purpose very serious since independence. Since

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independence till now Ghana has established thirteen public universities. These universities have over the years found it difficult to admit all qualify applicants. This problem is largely due to the lack of infrastructure development on various university campuses. There is a mounting demand for the acceleration of infrastructure development in the Country's State Universities in order to meet the growing needs of its population.

Basically, school infrastructure refers to the totality of physical facilities that create the learning environment of a school (Daniel, 2014). It has been observed that delivery of quality education is greatly hampered by poor and inadequate school infrastructure (Obonyo, 2011).

The early years of Ghana's independence experienced massive school infrastructural development; the setting up of the Ghana Education Trust (GET) supported the rapid expansion of school infrastructure (Kadingdi, 2006). The Accelerated Development Plans (ADP) for education and the 1961 Education Act facilitated rapid and steady growth of schools both numerically and qualitatively; and Ghana's education system shortly after independence gained the enviable reputation of being one of the best and most respected in Africa (World Bank, 2004; Ghana Human Development Report, 1998). The economic decline experienced by Ghana in the 1970's and early 1980s saw a sharp decline in Ghana's educational system; this was evidenced in the myriads of problems experienced by the sector such as: inadequate and poor school infrastructure (Akyeampong et al. 2007; Kadingdi, 2006).

The 1987 educational reform introduced an aspect of community participation in the provision of school infrastructure, for instance community labour was very instrumental in the J.S.S. school building programme (Little, 2010). To reduce cost and improve accessibility to secondary school education, community day secondary schools were introduced as part of the 1987 educational reform (Akyeampong, 2010).

At the root of school infrastructural problem in public schools in Ghana is funding and resource constraints. Government is not able to mobilise enough resources to provide all infrastructural needs of public schools in every community, and this resource constraint is a universal problem; with the developed countries not being exceptions to resource constraints. Addressing the infrastructural challenges of schools in Ghana requires doing things out of the ordinary, thinking outside the box, and in fact been innovative (Daniel, 2014).

For the country to continue solving her infrastructure problem; the government in recent years has introduced another way of solving infrastructure problems in the country's schools. This system is referred to us Ghana Education Trust Fund (GETFund).

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The Ghana Education Trust Fund (GETFund) is a public trust set up by an Act of Parliament in the year 2000. Its core mandate is to provide funding to supplement government effort for the provision of educational infrastructure and facilities within the public sector from the pre-tertiary to the tertiary level. One of the objectives of the GETfund is to provide financial support to the agencies and institutions under the Ministry of Education, through the Ministry, for the development and maintenance of essential academic facilities and infrastructure in public educational institutions, particularly, in tertiary institutions (The Ghana Education Trust Fund Act 2000 Act 581, 2000)

It is quite obvious that adequate and sound school infrastructure at every level of education is critical to the realisation of the mission and vision of Ghana's Education Ministry. It has been proven that inadequate and poor school infrastructure has negative effect on school enrolment, effective teaching and learning, academic performance of students, wellbeing of students, motivation of students and teachers, and accessibility to education (Obonyo, 2012; Cuyvers et al., 2011; Crampton and Thompson, 2008; Akyeampong, 2010). Therefore, the need to address infrastructural challenges in schools cannot be over emphasized.

RESEARCH MOTIVATION

Little has been done on assessing the effectiveness of public private partnership in infrastructural development in the state public Universities of the Republic of Ghana. The study hopes to add on to knowledge in this area. The motivation behind this research is to assess the effectiveness of public private partnership in infrastructure development in the state public universities in Ghana. The research will determine the number of infrastructure undertaken by the private sector in the state universities. The PPP model appropriate for the development of infrastructure in the state public universities will be considered.

SIGNIFICANCE OF STUDY

There is a gap that exists in literature on the PPP model appropriate for the development of infrastructure in the state public universities in the republic of Ghana. This study therefore contributes to the existing knowledge by establishing the PPP model appropriate for the development of infrastructure in the state public universities in Ghana. Instead of using existing models such as Service contract, Management contract, Lease, Concession and Divestiture; built operate and transfer which has not been largely considered in most of Ghana's privatization concept will be put under perspective. Consequently the study will add new knowledge on establishing the PPP model appropriate for the development of infrastructure in the state public universities in Ghana.

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PROBLEM STATEMENT

Though the GETfund was established to solve educational infrastructure and the others, the fund has not been able to provide the numerous needed infrastructures at the state universities. For instance almost all the 19,904 students of University of Development Studies spread across the four campuses of the university are reportedly stranded without hostel accommodation (Edmond, 2010). The economic decline experienced by Ghana in the 1970's and early 1980s saw a sharp decline in Ghana's educational system; this was evidenced in the myriads of problems experienced by the sector such as: inadequate and poor school infrastructure, lack of basic teaching and learning materials, shortage of teachers, low enrolment levels and high drop-out rates (Akyeampong et al. 2007; Kadingdi, 2006). It has been proven that inadequate and poor school infrastructure has negative effect on school enrolment, effective teaching and learning, academic performance of students, wellbeing of students, motivation of students and teachers, and accessibility to education (Obonyo, 2012; Cuyvers et al., 2011; Crampton and Thompson, 2008; Akyeampong, 2010).

The inability of the state to provide the needed infrastructure development in State Universities call for the Public Private Partnership to improve the needed infrastructure that the country's Universities require. The problem of the country's economy which causes lack of fund for so many developmental projects, further worsen the infrastructure problem at the country's universities. This infrastructure difficulty has forced some of the state universities authorities to stretch their hand to the PPP for help.

RESEARCH QUESTION

(RQ1) Is the PPP model used to provide infrastructural development in the state universities?

(RQ2) Is the PPP model in infrastructural development within the public universities in Ghana effective?

(RQ3) Do the private sectors develop any infrastructure at the state public universities?

AIM OF THE STUDY

This research is to establish the best PPP model for the infrastructural development at the state universities in Ghana.

RESEARCH OBJECTIVES

(RO1) To assess the effectiveness of public private partnership in infrastructure development at the state public universities in Ghana

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(RO2) To find out the number of infrastructure undertaken by the private sector at the state universities in Ghana

(RO3) To find out which of the PPP model is appropriate for the development of infrastructure in the state public universities

LITERATURE REVIEW - THEORETICAL AND CONCEPTUAL VIEWS ON EDUCATION AND ITS INFRASTRUCTURE DEVELOPMENT

Introduction

Education is a concept that may be defined differently, therefore, may defy precise definition. However, education could be explained as a systematic or organised means which are designed to bring about learning formally or informally. Nonetheless, basically, it aims at socialising the child by the adult to acquire the culturally desirable and appropriate behaviours, goals, motives and skills for his or her future role in the society (Hetherington, 1979; Davidoff, 1980; Aboagye, 1997). Higher education is critical to economic success and long-term development of Ghana, a country facing several challenges of growth and development on many fronts. Higher education provides economic and social benefits, both to the individual and the public, produces qualified human capital, adapts and generates knowledge, promotes international cooperation and improves competitiveness in the global knowledge based economy.

Despite the substantial progress that has been made over the years in providing access to education, the nation continues to grapple with serious challenges in terms of infrastructure within the High Education Sub Sector (Duwiejua & Newman, 2014).

School Infrastructure

Crampton and Thompson (2008) define school infrastructure to include deferred maintenance; new construction; renovation; retrofitting; additions to existing facilities; and major improvements.

It has been observed that delivery of quality education is greatly hampered by poor and inadequate school infrastructure. Conversely it has been proven that students' academic performance has improved, school attendance increased, and staff motivation enhanced by improvement in school infrastructure (Obonyo, 2011). A study by Cuyvers et al. (2011) suggests the following: i) differences in students' well-being can be attributed to the quality of their school's infrastructure; ii) there are differences in well-being between students who study in schools that have good infrastructure and students who study in schools with poor infrastructure; and iii) school infrastructure has the same impact on all students; whether in rural or urban settings. These findings clearly show the critical role played by quality of

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school infrastructure in the scheme of educational delivery, and the big problem created when these facilities are lacking.

Some Approaches Adopted by Ghana to Address School Infrastructural Problems

School infrastructural problem in Ghana include: non-availability, inadequate supply, and poor quality of school facilities such as classrooms; laboratories and laboratory equipment; dormitories/halls of residence/student hostels; office space; sports, recreational and entertainment facilities; computer and ICT facilities; dining halls/canteens; water and sanitation facilities; furniture (classroom, office and residential); and other such facilities which create the physical environment in which teaching and learning is delivered.

Over the years, Ghana's approach to addressing school infrastructural challenges has been multi-faceted and this includes: building and provision of new facilities; private sector participation; community participation; shift system; and distance education and e-learning.

➤ **Community Participation**

The 1987 educational reform introduced an aspect of community participation in the provision of school infrastructure, for instance community labour was very instrumental in the J.S.S. school building programme (Little, 2010).

➤ **Private Sector**

Private sector participation in education delivery in Ghana has been significant and progressive over the years. Between 2006 and 2009, private sector participation in education is estimated to have grown by 26% (International Finance Corporation, 2010). In Ghana, private schools represent 33% of total number of basic schools in the country (IDP Foundation Inc., 2012).

➤ **The Shift System**

The shift system of education, whereby pupils attend classes either in the mornings or afternoons in alternatives for a specified duration of usually two weeks, has been a feature of some basic schools since the 1960s (Bervell, Cobbina Sam, and Boadu, 2013). This system was introduced to address problems of overcrowding when school enrolment increased; because government was unable to increase school infrastructure and other facilities to meet increasing demands; short supply of teachers exist; and the opportunity cost of schooling is high (MacWilliam, 1964) cited in (Bervell, Cobbina Sam, and Boadu, 2013). Though the shift system has been used over the years as a means of containing the problem of inadequate supply of school infrastructure, the system has been criticised for being a major setback to the nation's educational system and also one of the major causes of poor academic performance of pupils at the basic school level (Bentil, 2009). The government in 2009 announced the

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intention to abolish the shift school system with the aim of halting poor academic performance (Ghana News Agency, 2010).

➤ **Distance Education and E-learning**

Distance education has been defined by Perraton and Creed (2000) as any educational process in which a significant proportion of instruction is conducted by someone removed from the learner in space and/or time. Nsiah (2011) identifies distance education as an effective solution for addressing the problems of inadequate school infrastructure; rural urban divide; logistical and material constraints; and the shortage of qualified and competent teachers in the delivery of quality education in Ghana. This mode of education delivery became imperative due to the growing demand for higher education by qualified applicants coupled with the limited space available for admission; limited infrastructural and other resources prevented the state universities from admitting more than half of qualified applicants (Lawoe, 2005).

Some Innovative Ways of Addressing the Problem of School Infrastructure in Ghana

At the root of school infrastructural problem in public schools in Ghana is funding and resource constraints. Government is not able to mobilise enough resources to provide all infrastructural needs of public schools in every community, and this resource constraint is a universal problem; the developed countries not exceptions. Addressing the infrastructural challenges of schools in Ghana requires doing things out of the ordinary, thinking outside the box, and in fact been innovative. It requires smart deployment of information and communication technology (ICT); innovative ways of engaging the private sector, and adopting a proactive method of maintaining existing facilities. The following are some of the proposed innovative means of addressing school infrastructure problems in Ghana:

➤ **Making judicious use of Public Private Partnerships (PPPs)**

Internationally, PPPs have been found to contribute to addressing both physical infrastructure and quality education issues (Mehta, Bhatia and Chatterjee, 2010). The government of Ghana stands to gain immensely by partnering with the private sector in partnerships such as: build-operate-transfer (BOT); build-own-operate (BOO); build-own-operate-transfer (BOOT); and operation and maintenance, to build better infrastructure faster, to maintain infrastructure more effectively, to better manage schools, to provide better budget certainty to government, to deliver better quality education, and to attain universal primary enrollment (MDG 2) (Oyewole, 2009).

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RESEARCH METHODOLOGY

Research methodology involved the processes used for the collection and analyses of the data using various techniques and tools to find answers to the questions. It is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately, and economically.

Research Design

The research adopted a mixed approach in the process of collecting and analyzing data. The mixed approach in this research consists of two methods of data collection and analysis: survey questionnaires, semi structured interview. This is due to the fact that different approaches leading to greater validity and reliability than a single methodological approach according to Denzin (1970), Dixon et al. (1988) and Yin (1994). The questionnaires were designed to find out a lot about the quasi BOT arrangement for infrastructural projects by higher education institutions and also the internal and external factor that influence readiness of both the institutions and the private sector. The semi-structured face-to-face interview was designed to qualitatively analyze respondents free format comments on the main subject.

Research Population

The study zero in on the ten (10) traditional universities spread across the length and breadth of Ghana. This is because these institutions had tried one or more quasi BOT before the PPP Policy was formulated. Again, in terms of activities, they seem to have the potential to initiate PPP projects. In all two (2) top officials, two (2) Prospective private sector players and a student representing the student body for each of the selected institutions were targeted, making a total of 50 officials.

Sample Size

In all a total of fifty (50) officials from 10 traditional universities will be involved in the exercise.

Sample Technique

The study used purposive sampling for all the top officials in both the institutions and the private sector, since the information required was technical in nature and could be provided by a population with some specialties/expertise and board room information. Most of the private sector selected had old relationship with the institutions and most especially companies with BOT relationship.

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Data Analysis

Data collected will be analysed using structural equation modeling (SEM) to develop an appropriate BOT Model for higher education institutions in Ghana. Other part of the data analysis was done using SPSS for other findings. Data were presented in the form of bar charts and pie charts.

Delimitation of the Study

The scope of this thesis focuses on developing an appropriate BOT for higher education institutions in Ghana and factors influencing readiness of both the private sector and the institutions. The study was restricted to the 10 traditional Universities in Ghana.

Ethical Consideration of the Study

Ethical issues will be considered in carrying out the study. Respondents will not be forced to participate in the research. The privacy of respondents by ensuring confidentiality in terms of information gathered and also ensuring anonymity of respondents throughout the study. Permission to carry out the study was sought from all relevant authorities. The main objective of the study was explained to all the participants in the study and their consent sought prior to interview.

OVERVIEW OF CHAPTERS

Chapter 1 Introduction

This chapter will focus on the background of the study and the problem statement. The aim and the objectives will be considered. Research questions be will presented and the research methodology stated. The ethical consideration will be clearly stated in the chapter.

Chapter 2- Theoretical and Conceptual views on PPP

The chapter will focus on theoretical and conceptual views of literature on PPP that will be important in this study. The chapter will evaluate a survey of related literatures from books, journal articles and conference papers from relevant sources.

Chapter 3- Gaps in PPP

This chapter will deal with the gaps observed in PPP which was not evaluated holistically taking consideration of developing countries like Ghana in previous model. These gaps form the additional new constructs in the current studies of conceptual framework. The gaps that will be identified are the needs and expectations of the institutions and private partners on the PPP.

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Chapter 4- PPP Delivery within Higher Education Institutions- African Experience

This chapter will look at studies conducted in other Africa countries including Ghana, Nigeria, South Africa, Zambia, Kenya, Tanzania and Egypt will be considered in relation to PPP. This will assist to identify other factors that affect PPP.

Chapter 5- PPP Delivery within Higher Education Institutions South Africa

This chapter will focus on the development of PPP Model in South Africa and the suitable model that is used in the country. The factors that affect PPP will be considered and its impact on the infrastructure delivery within Higher Institutions.

Chapter 6- Research Methodology

This chapter will focus on the methodology that will be used to collect the data of the study. It will give the sampling technique in selecting the sample size and research instrument used in gathering information from the respondents.

Chapter 7- Conceptual PPP model

In this chapter findings from review of literature on existing models on PPP will be discussed. This forms a basis of conceptual PPP model's theory. The hypothesized PPP model will be stated.

Chapter 8- Results

The findings will be stated based on the said objectives from the questionnaire survey.

Chapter 9- Discussion of Results

This chapter will stress on the analysis and interpretation of result obtained from the questionnaire. Discussion on the model will be covered.

Chapter 10- Conclusion and Recommendations

The conclusion and recommendations of this study will be considered in this chapter. Recommendation for future work will be stated in the chapter.

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