JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

DEVELOPING COUNTRIES AND ITS CHALLENGES IN EMPLOYING THE SERVICES OF STRUCTURAL (CIVIL) ENGINEERS IN PLANNING AND CONSTRUCTION.

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ABSTRACT

Education in developing countries is very important as people day in day out are trained and equipped with varied skills and knowledge in all areas to come out and positively impact their communities, societies, and their country at large. Some of these trained and learned people are civil engineers who are expected to play various significant roles in efforts to develop various developing countries by designing structures that are of top quality and price efficient. The quality of structures such as roads, bridges, railways, etc. Can attract investors to come in and invest heavily in the economies of these developing countries. Unfortunately, there are many Civil (Structural) Engineers ready to offer their services to make sure that infrastructural development in developing countries is safe, beautiful, and reliable but the people in power as well as institutions and organizations are not employing them. In this study, various challenges to this effect have been outlined, unemployment challenges and a few recommendations made.

Keywords: Development, Developing Countries, Structural (Civil) Engineering, employment, planning, construction, challenges.

INTRODUCTION

According to Pearson (1992), development includes the employment of both qualitative and or quantitative improvement in the use of existing limited resources. Pearson (1992) also reiterated that development does not only describe a particular aspect in social, political or economic progress but is rather a multi-dimensional and complex expression of the multiple of strategies that are currently in use in various to ensure the smooth

transition from current undesired socio-economic and environmental conditions to more desired conditions. This process of change involves doing what needs to be done to ensure available resources are expatiated and given more value (Mathur, 1985).

Developing countries mostly share common traits with each other because of either their history and or geographical location. For instance, most developing countries share the following issues; with issues like sanitation, there is a general case of low accessibility to safe, clean and hygienic water for consumption; there is inadequacy in access to energy; there are very high levels of air and water pollution; a large number of people suffering from heat stroke and various deadly communicable diseases; there are high levels of pedestrians and vehicular accidents; and the poor nature of infrastructure used for the delivery of various essential basic services like health and education. Also, there are high levels of poverty, higher crime rates, huge formal education deficit, inadequate access to family planning procedures and programs which leads higher levels of unwanted pregnancies, the rapid spread of unplanned urban settlements (slums), and corruption in all aspects of the economy, government, and political instability. Global warming which is an elevated climate change crisis has projected to have very huge negative impacts on many developing countries more than already developed countries economies, as most of them cannot the associated challenges and restrictions that come with it (Althor et al., 2016).

Infrastructure has very huge influence on the entire process of developing countries to reach their desired state of development. Infrastructure such as good roads, schools, residential buildings, and industrial buildings can go a long way to contribute to the development of developing countries. Developing countries have got well trained civil / structural engineers that are well equipped and prepared to work and make sure structures befitting the intended purposes are constructed well.

Structural engineering is a sub-section that is part of the body of civil engineering through which structural engineers are taken through several sessions and lessons to equip them with skills and knowledge which would enable them easily design the framework that serves as the foundation for the formation and construction of various built structures. Also, structural engineers must be skilled and knowledgeable enough to understand and calculate for situations like the probability of an earthquake happening as well as its intensity of earthquakes should in-case it happens and also the stability and strength of the various “skeletons” that make up buildings (FAO, 2016). Structural designs are most often incorporated with the activities and roles of other designers, including architects and service engineers because these designers most often oversee the all activities that contribute to the construction of projects by local contractors (RMG Engineers, 2015). The work of structural engineers sometimes also involves the design of some machinery, medical equipment and vehicles that have an impact on system operation and safety.

The problem is that many private bodies, individuals and even some public bodies prefer to seek the services of Artisans who have no formal training and do not understand concepts and standards clearly required to design and construct structures that are very safe and reliable for use.

This study seeks to find out what the challenges, by many private bodies, individuals, and public bodies/institutions in developing countries are, in employing the services of structural engineers to ensure that the safety, economy, serviceability and quality of constructed structures such as buildings, bridges and roads are done right according to standards and codes governing the entire design and construction process of these structures.

LITERATURE REVIEW

A concise literature review of previous work that is directly relevant to this present study is presented. In this section, previous research is explored and presented under: (i) Structural Engineering (ii) Planning Process (iii) construction (iv) Employment conditions for developing countries (sub-Saharan Africa) (v) The Challenges of the Construction and Planning Process in Developing Countries

Structural Engineering

For the purpose of the study, the study utilized the structural engineering theory is dependents on applied substantial legislatures and factual knowledge of the structural effectiveness of various materials and geometries. Frequently, structural engineering design employs very fundamental structural concepts and designs to create extremely complex systems. Structural engineers are in-charge of making sure all the inputs that is financial resources, structural elements and materials are used efficiently to ensure the predetermined objectives are met (Hibbeler, 2010).

To meet the established and approved design goals and to ensure the maximum level of user safety and comfort, structural engineers perform a variety of analyses, designs, plans, and investigations on a wide range of structural mechanisms and systems. Safety, technical, economic, and environmental considerations are the primary focus of their work; however, other considerations like as aesthetics and society may also be relevant (RMG Engineers, 2015).

Structural engineers develop structures such as residential and/or commercial buildings, stadiums, and bridges. The majority of structural engineers use their talents and knowledge in the building business. Additionally, there are structural engineers that operate in the aircraft, automobile, and shipbuilding industries. Structural engineers frequently collaborate with design professionals, civil engineers, mechanical engineers, electrical engineers, surveyors, and construction managers in the construction business (RMG Engineers, 2015). A

structural engineer can also design oil rigs, space satellites, aircraft, and ships, among other constructions (CSCE, 2007).

Structural engineers make efforts to make buildings and bridges strong and solid enough to withstand all structural loads which includes and not restricted to gravity, wind, snow, rain, earthquake, compression of soil, temperature and traffic which may hit the structure in order to ensure and prevent any occurrence of death or injury. These engineers again ensure that all structures they design are strong enough and will not succumb to stresses like bending or vibration beyond acceptable set limits (Goldin, 2020). Human comfort is also very much considered especially with the limitations that are set along with the design. Fatigue is also an important dimension for the design of bridges and aircraft or other structures that experience multiple stress cycles in their lifetime. The durability of the materials against possible deterioration, which can adversely affect the performance over the life of the design, is also considered (Basu et al., 2019).

Planning

Planning can be defined as taking advanced decisions on what an individual or group wants to implement and achieve over a foreseeable time to come. It is a process of planning and strategizing before action is taken. The process involves the determination and setting of goals and activities in pursuance of the attainment of the predetermined goals. Planning is the process of identifying a need(s), analyzing the needs as situational analysis, developing alternative courses of action and selecting the best alternative from the various courses of action that are available to ensure the realization of organizational goals (Gold et al., 2017). Planning is a systematic and sequential occurrence of events which involves the identification of needs and the creation of best methods to meet those needs that allows you to identify priorities and establish your operating principles. Planning can also be defined as the process of thinking about the activities needed to achieve a desired goal. Every project is has attached to it a vision and this vision serves as a menta forecast which informs developers on what the project intends to achieve. The evolution of envisioning and the ability to strategically plan, are considered the main drivers of human evolution (Sudendorf and Corblis, 2007). Planning is an important part of ‘SMART’ behavior. The planning process focuses on identifying the company’s goals and the allocation of resources needed to achieve those goals. Achieving the vision involves planned activities that are consistent with the broader organizational strategy. This is enabled by sustainable strategies supported by practitioners at all levels (Altenberg, 2019).

If possible, the proposed development plan should adhere to developed urban land use regulations, such as zoning standards and building codes. The project is usually evaluated (with official jurisdiction (AHJ)), usually by the municipality within which the project is placed, for possible impacts on nearby properties and existing infrastructure such as economic infrastructure like transportation, electricity; social amenities and utilities, covering water supply, sanitation, telecommunications, just to name a few (Benjamin, 2020). Through site analysis, site surveys, and geotechnical inspections, information can be gathered. Generally, building cannot

begin until planning approval is acquired, and initial preparatory work is required to guarantee that the appropriate infrastructure has been improved before to construction. Precautionary measures also include the assessment of utility infrastructure to prevent undesired events like power outages and other hazardous situations (Andrioni and Fiona, 2020).

Construction process

The "construction process" which is also often referred to as the "construction phase" is a physical set of activities that involves the demolition, removal, monitoring, construction, landscaping or repair work as well as all other operations that are carried out in the construction or reconstruction of structures. Construction works are usually done by contractors, but in the residential sector, contractors may be called builders or home builders, and contractors may hire subcontractors and other suppliers to do some or all of the work (Moses, 2019).

This process can be accomplished after the procurement process by the handing over of sites by the client to the contractor and the return of the completed project to the client. Tasks such as short writing, assembling a design team, designing, and so on does not cover pre-construction issues, but can be done with the construction itself (Suddendorf & Corballis, 2007). Some construction projects entail repairs, in which case the owner may serve as designer, paymaster, and laborer. The comprehensive planning, design, building, and commissioning stages must typically be delegated to one or more professional organizations for the execution of more complicated or ambitious projects (Mason 2016). Often, the owner will choose some of the workers who will oversee the project (this could be the designer, contractor, construction manager, or another consultant). These experts are typically chosen based on their experience in submitting projects and will help the owner define the project, agree on budgets and plans, apply to relevant government agencies, and secure the services of professionals. Contracts are then signed by all organizations providing services, as well as other specific plans aimed at guaranteeing compliance with regulations, execution of specified tasks on time and within budget, and safety (Bass et al., 2006).

The relationship between design, financial, and legal considerations is interdependent. In addition to being structurally solid and functional, the design must also be legally and physically suitable for construction and operation. The financial structure must be sufficient to construct a product and lawfully pay its debts. The legal framework integrates design with finance and other architectural processes (Goldin, 2020).

It also has an effect on the way transactions are procured. If a client wants a company to design a project and then select a prime contractor to build an asset through a competitive process, this is known as a Design-Build project. Alternatively, a client can select a company to oversee design and construction themselves, which is known as a Design-Build project (Mosi, 2019). Procurement methods that promote collaboration (cooperation,

collaboration) between the client, the contractor, and other stakeholders in the building project are generally aimed at reducing overly competitive business rules and antagonism.

Basically, the structural engineer is directly involved in the planning and construction process of all structures. Contractors are therefore expected to employ the services of these structural engineers to work hand in hand with a team of other skilled engineers to achieve their goal. Let's now look at the challenges of employment in developing countries.

Employment Conditions of Developing Countries (Sub-Saharan Africa)

Most (almost 60%) of the 456 million Africans are employed; most are self-employed or have precarious jobs. 33 million (4%) are unemployed and 286 million (40%) are underemployed. In sub-Saharan Africa (SSA), very few workers receive wages and salaries (17%); sole proprietorship in form of family farming or home industries (55.5%). In the private sector, regularly paid employment accounts for only 10% of total employment (Bhorat et al., 2020). Another 10% work in government (national government and state agencies) (Mbaye & Fatou, 2018). Among African countries, South Africa (46% of total employment) and Botswana are home to the highest regular/fair private sector earnings (23 %) (Chiware, 2021).

Employment growth rates are relatively low in all regions of Africa. In West Africa, Central Africa and East Africa, the rate is 2-3%, well below the population percentage. Since 2000, employment growth in South Africa has been only 3% and has fallen to 2% over the last five years. Employment growth remains stuck at an annual rate of 3% (AfDB, 2016). But unemployment does not necessarily mean a tight labor market or an abundance of jobs. Conversely, this means that paid work is not available to many people in African countries. Unemployment rates vary considerably from country to country. Data show that in most African countries, less than 20% of those entering the labor market find gainful employment. However, it has been found to be very high in Botswana, Nigeria and South Africa (Basu et al., 2019).

South Africa, Swaziland, Lesotho, and Namibia have some of the highest unemployment rates in the region. Southern Africa's unemployment rate is 30%, compared to 6% to 8% in West and East Africa. GDP growth in South Africa has decreased to less than 3% during the past five years, which is still below the average for 2019/2020. (Bhorat et al., 2020). Unemployment is particularly high among young individuals, which may explain this trend. South Africa had been in a period of "increasing unemployment" until that year. Growth dropped dramatically after 2006, and unemployment rose in tandem. As a result of this, the unemployment rate is predicted to rise from 24% in 2010 to slightly under 30% by 2020, according to the government projections (ILO, 2020). There is a lack of work prospects for new entrants to the labor market because of sluggish employment growth in all industries. According to the International Monetary Fund (IMF), just approximately 40% of the workforce is employed. By comparison, these figures are 60% in Mexico, 50% in Turkey and about 70% in Brazil. The incidence of urinary incontinence in adolescents is very low, only 20%. Research on

unemployment by demographic group clearly shows that it varies considerably (Bhorat, Haroon and Morné Oosthuizen, 2020).

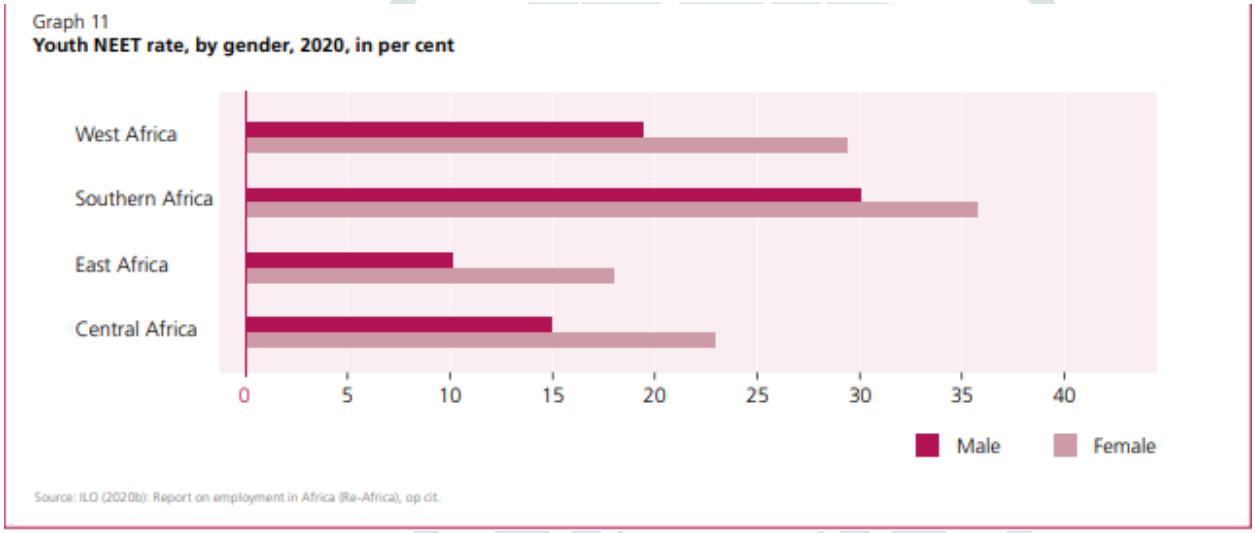
South Africa's situation is vastly different from that of other African countries. Because of the lack of an unemployment insurance program, the country's unemployment rate is typically below 5 percent. The unemployed therefore need to find work quickly to support their costs of living, whether it is in the informal sector, as an urban farmer, as a farm helper, or as a family employee (Merotto, 2020). Women have a higher rate of unemployment. A minor advantage for men is found in low-income countries (LICs), but this advantage dramatically grows with time in nations where earning income is marginally greater than in LICs. As a general rule of thumb, the situation varies greatly from country to country (Bhorat & Tarp, 2016). Each of these countries exhibits a distinct pattern. Women in prosperous countries are more likely to be unemployed than men, but this disparity is decreasing. While growth and rising per capita income are linked, there is no evidence of an increase or decrease in the unemployment rate (Benjamin et al., 2020).

The employment crisis in Africa is truly a challenge for youth employment. The situation of young people is clearly different from the overall unemployment trend. The youth unemployment rate in SSA was 8.7% in 2019 (Bhorat et al., 2020).

Upper-middle-income countries have a higher percentage of NEETs than lower-income countries (MICs). The NEET rate here rises to 30%, although in the smaller MICs it is only 22%, with a slight growing tendency. LICs make up just about 16-18 percent of the total population. As money rises, the number of NEETs does not decrease, but rather rises. This reversal of trends is cause for alarm. Youth unemployment and underemployment are on the rise while income levels rise, according to other indicators (ILO, 2020). These developments have a special impact on women their age. In West Africa, the NEET rate for young males is around 19 percent (2020), but for young women it is 29.5 percent (ten percentage points higher). All of Africa's regions are the same (see Chart 11). In other words, young women shoulder a disproportionate share of the burden. Uganda is an illustration of how drastically the position of young people has deteriorated (Robert, 2021). Uganda has a young and quickly rising population. About 40% of the population consists of individuals between the ages of 15 and 34, while 70% of the population is of working age. By 2020, the Ugandan economy is projected to generate three times as many employments per year as it did throughout the 2000s, averaging 300,000 jobs each year. Instead of forcing young people into the informal sector, a portion of the additional millions of jobs created each year should be devoted to providing paid employment (Merotto, 2020). The situation is likewise precarious in other nations. Only Mali and Gabon in Africa are growing their workforces faster than Uganda's average yearly growth rate of 3.8%. In contrast, informal laborers in Senegal are primarily employed in agriculture (23%), retail commerce (22%), and industry (5%). (12.5 percent). More than 97 percent of all jobs are performed informally. Concerning is the fact that 41 percent of those aged 15 to 34 are either unemployed or out of school (NEET, 2020). This occurs in 51% of women and 29% of men in

this age group. The NEET rate among rural youngsters is 49 percent, which is 32 percent higher than in the Senegalese capital Dakar (Mbaye & Fatou, 2018).

According to research undertaken by Lefeuvre et al. (2017) on trends in Ivory Coast, 15- to 24-year-olds constitute about one-third of the working-age population. There have been significant gains in terms of school enrollment. Nonetheless, labor market considerations are crucial. 40 percent of the unemployed are young adults. 25 percent of young people are unemployed, and 22 percent do not work, attend school, or obtain training. Because the proportion of informal groups with genuine development potential is so low, the concentration of young people in this sector is of greater concern. The analysis of Lefeuvre et al. (2017) demonstrates that the integration of young people into the job market is not a structural issue, but that the issue appears to be becoming worse. Almost all young people (97%) are employed in the informal sector (Robert, 2021).



Source: Robert, 2021.

The Challenges of the Construction and Planning Process in Developing Countries

The Environment

Environmental issues have been important since the 1980s and a major topic of international research and opinion since the mid-1980s. There is a perception that countries are aware of the environment or should become environmentally conscious and try to protect it when it reaches high levels of social and economic development only (Bhorat & Tarp, 2016). However, the topic of environmental protection should be important for developing countries, as they face significant environmental challenges. (ADB, 2016). Most of these countries have fragile habitats and face landslides. Many of them also lack access to fresh clean water, which could increase and could lead to conflict amongst states. Developing countries are also rapidly losing forests. Countries are also facing an increase in urbanization with air pollution problems and existing infrastructure demands such as waste management (Benjamin et al., 2020). Another major problem in the world of

developing countries is the number of resources needed to fill the gaps between infrastructure and housing that need to be filled if they want to thrive, and make life successful for its inhabitants. For example, Basu et al. (2019) noted that more than 600 million people in cities around the world are homeless or living in dangerous conditions. Satisfying these basic economic and basic needs will put great pressure on the wealth of the country and the planet. These aspects underscore the importance of good governance in developing countries (Ofori, 2007). Environmental problems in developing countries are related to the lack of management skills, resources, and the legal and administrative structures necessary to address the problem, through public oversight and education, enforcement of orders and policies (rules and regulations), and design. and policy implementation and policy integration coexist with "financial instruments" (grants, grants and taxes). The above definition sets out the impact of construction work on the environment in developing countries. Table 1 shows the impact of construction on the environment, a topic of current significant literature (Basu et al., 2019). Perhaps the most important of the negative consequences for most of these countries is resource consumption, as the majority of their population is dependent on natural resources to a large degree (such as forests) for their livelihood. Health issues related to air and water pollution are also important, given the primary health care systems available in most developing countries. It is also worth mentioning the loss of land in construction in other areas, as the land is removed for other uses such as agriculture, resulting in the livelihood of some (Ofori, 2007).

Table 1: Environmental Impact and Construction Activity Considerations

What is used?	***Where is it built?***	***How is it built?***	***What is built***
Where are raw materials obtained?	The location of the facility; the nature of the terrain and ground conditions; and alternative land uses	Methods of construction on site.	potential for natural ventilation and daylighting)
Raw materials are extracted; how land is restored after extraction (if necessary).	Immediate physical environment; proximity to water sources and ecosystems.	Construction project management systems (e.g., quality management systems).	Life-cycle economics, quality, And maintainability. consideration
raw materials are processed.	social disruption (e.g., displacement of the site's inhabitants) Site	control measures (housekeeping)	The amount of energy and other resources used in the operation of a building Whether
and how renewable raw materials are regenerated	Economic disruption (e.g., loss of livelihoods of previous inhabitants). The welfare	of site workers, neighbors, and the public	as of demolition of building (deconstruction)
How materials are transported to and stored on, a site	present infrastructure, need for expansion to serve the new building, its impact	Resource management (including waste minimization)	How demolition waste is recycled and reused on-site

	impact on local vehicular traffic		

Source: Adapted from Ofori (2000).

Numerous nations, particularly industrialized nations, have taken measures to ensure that the construction industry uses materials, processes, and practices that reduce the environmental impact of operations and their end products. Developing nations can learn and implement a number of useful lessons from these strategies (Altenburg, 2019).

As Ofori (2000) emphasizes, the construction sector lagged behind other sectors in response to environmental protection. In developing countries, this issue is underestimated when it is very important. Working on the environmental impacts of construction in developing countries requires immediate attention. Due to their limited resources and expertise, the emphasis should be placed on prevention (Akinkugbe et., 2017). The necessary steps necessitate research. Due to the weakness of the private sector in developing nations, the government will play an important role as a construction customer. Construction companies and practices should be incentivized to continuously discover new inputs and procedures that reduce the negative environmental effects of construction activities. Detailed case studies of good practice would also be useful (Bass et al., 2017).

The Culture

The procurement and project management structures currently utilized in developing nations were inherited from Western nations with a history, culture, collective experience, and construction experience that are notably dissimilar to those of developing nations. These institutions regulate the sector's documents, procedures, and practices and define the roles and relationships of actors, i.e., networks of power and authority (Acemoglu, 2019). They emphasize the formality and consistency of established channels of communication. Interestingly, the origin countries of these tender systems have modified their procedures. Adegoke (2019), for instance, encouraged the development of a spirit of trust and collaboration in a profession characterized by uncertainty, conflict, and challenges, after conducting an in-depth analysis of the UK construction industry. Moreover, the "traditional" tendering strategies that are still prevalent in the Commonwealth are only a few of the numerous options currently available. In addition, British construction was influenced by other industrialized countries, most notably the United States. Adegoke (2019) stated that the failure to consider and incorporate cultural values in tendering processes for construction used in South Africa is a major factor leading to poor project performance. Research in other countries may reach similar conclusions (Barrett et al., 2019). Culture has become the main topic of research in business enterprises. Every organization or institution has a culture defined by its history, size, business goals and objectives, production technology, market, and work environment, it has been discovered (Barrett et al., 2019). Cultural issues are always at the forefront of

construction, with several teams briefly coordinating on each project. The ability to manage cultural issues is a functional and business success factor, especially in the multicultural context seen in large construction projects (Said, 2010).

Globalization

For decades, globalization has been a prevalent theme in newspaper headlines. From the perspective of developing countries, there are vastly different arguments regarding the merits of globalization but not its process (Rotman, 2013). These businesses find globalization to be an unnecessary reality. Indeed, many construction projects required for a country's socioeconomic development are beyond the scope, uniqueness, and complexity of its institutions (Nguyen, 2015). Consequently, developing nations should invest in the importation of certain construction projects. Los et al. (2015) identified three trends: (a) higher rates of private sector participation in large-scale infrastructure projects; (b) more direct integration into emerging construction project packages; and (c) a decrease in foreign participation in the construction industry in the majority, if not nearly all, developing countries. These occurrences are attributed to "the consolidation and diffusion of markets constrained by technological and regulatory cost constraints" (Maisonnave et., 2013).

Turin (1973) identifies in the matrix of the construction industry in developing countries large projects called "international mega-projects" which can only be undertaken by foreign contractors. The World Bank (2015) is among the researchers who have identified “international” or “foreign” workers as the most important among large construction companies in emerging countries. Majumdar & Borbora (2015) and other authors recommend that developing nations use their construction activities to foster the growth and development of their indigenous workforce so that they can replace foreign firms. On the other hand, Los et al. (2015) note that the dominance of foreign firms is not over, and they advise developing nations to hire long-term foreign firms to carry out difficult and important work. Leigh and Neill (2011) evaluate the potential for technology transfer from the activities of foreign entrepreneurs in developing nations. Strassman & Wells (1988) observed that Japanese and South Korean entrepreneurs benefited from the transfer of technology by their American competitors. Leigh and Neill (2011) assess the potential for technology transfer resulting from the actions of foreign entrepreneurs in developing countries. Strapman and Wells (1988) found that Japanese and South Korean entrepreneurs benefited from the transfer of technology by their American competitors. Mahmood and Khalid (2013) believe that the gap between local construction companies and their peers in terms of technical, financial, and managerial knowledge can be bridged in the long run through technology transfer, such as through a partnership between two industries. Nevertheless, many researchers have highlighted barriers to technology transfer, including the propensity of foreign entrepreneurs to adopt innovations that will not support host countries' efforts to develop their industries. developed (Los et., 2015). Work by Mahmood & Khalid (2013) shows that foreign firms are reluctant to effectively move their technology because they believe it means meeting the needs of their competitors in the future. Ofori (2007) argued that local and international

policies would benefit from systematic efforts towards the latter. (Nicholson & Noonan, 2014) draw lessons for entrepreneurs in developing countries from the international operations of global companies. Ofori (2007) indicates that local and international entrepreneurs in Singapore have benefited from the activity of the latter.

OBJECTIVES

The main objective of this research is to find out the Challenges in Employing the Services of Structural (civil) Engineers in Planning and Construction in developing countries.

RESEARCH FINDINGS

Challenges in Employing the Services of Structural (civil) Engineers in Planning and Construction

In developing countries, there is a huge deficit of employment. That is to say that developing countries are characterized by high levels of unemployment. The statistics from research works indicated in the previous findings that most of the youth are unemployed. This is due to varied reasons and the civil engineering sector is not exceptional. These reasons are discussed as follows.

Labour demand and supply mismatch

There seems to be a significant discrepancy between the skills provided by the school system and the demands of the labor market, leading many young graduates to an impossible scenario of being exploited in the mainstream economy. The economy is also moving towards a skills-based approach, but its youth lack modern economic skills (NPC 2011). Hauseman (2008) argues that the main explanation for widespread unemployment in the country is a systemic discrepancy between the talent sought by the modern economy and the opportunities it offers. The NPC (2011) echoes this point: the lack of young people and the skill disparities that affect the economy as a whole are particularly worrying. The argument that companies use to explain the low youth employment rate is that it does not accurately reflect the level of teaching skills in school, so it is risky to hire untrained and inexperienced people, which increases their costs. Curriculum in poor countries is largely conceptual. Therefore, students and graduates do not have the practical exposure that comes with it, especially if structural engineering is a practical subject. An engineering course is a practical course, so if a person does not discover or is unable to do the practical aspects, he is not qualified enough for the profession (Chemley, 2014). It should be noted that the engineering sector in many developing countries has been greatly hampered by inadequate applied research in the field of construction. The supply of labor has grown faster than the exploitative capacity of the economy. The majority of economic expansion has occurred in skill-intensive industries, such as financial and business services (NPC 2012). A common explanation for persistent and rising unemployment is a deficiency in employee skills. Changes in the combination of labor needs for skilled workers are associated with skill deficits, reflecting the education inheritance gap (Dias and Posel 2007).

The issue of corruption and Politicization

Bad administration and political corruption have always been called up when concerns of unemployment are discussed. This is because there are always round pegs in square holes. Quality of education imparted into students in the various educational institutions and the allocated public expenditure for education. The government machinery of developing countries has failed to invest in technical education that generates innovative and skilled minds (Cray et al., 2011). The skillset expected of structural engineers are not gotten and that is because the government has failed to realize that higher education needs enormous expenditure. Rather the politicians are gratifying their parochial interest ahead of the interest of its citizenry. In developing countries, corruption is a significant obstacle for entrepreneurs (contractors and consultants) (Dinh et al., 2012). The contractors were dissatisfied with the contract's status in Ghana and the political climate surrounding them. Entrepreneurs argued that politics drove the business environment. Each state that ascends to power will attempt to manage its own group of contractors because it recognizes that contractors are an effective means of political fundraising (Dizaji & Badri, 2014). Entrepreneurs usually pay a fee to people who participate in a project. The total bribes are usually around 10%. However, most contractors are trying to opt for 5% for this. Indeed, they have been accepted as part of standard business practices and may be included in the pay -for -work structure. The education sector in modern countries requires significant change and adaptation to meet the new needs of construction companies (Fukase, 2013). In modern times, due to the dynamism in the execution of civil works, organizations who are in high competition always choose previously satisfied qualified employees for employment rather than additionally giving place for the new ones (Kiyota, 2016). Also, even with the qualified personnel, they are denied access to the construction and planning process because of bad political policies where unqualified party members are given the works at the expense of the technical structural engineers who are endowed with the knowledge of structural engineering. Corruption has for a long while been identified as a problem in developing countries (Olken, 2009). However, it could also be an opportunity for companies that have the means secure deals and contracts from government officials by bribing them. In 2000, the company now known as Aon Ltd was fined £300,000 (US$435,000) for paying bribes to top government officials in Ghana, Nigeria, and the Philippines for deals and contracts in the 1990s (Transparency International 2009 report p.71). The corruption and politicization of issues within the building industry might also be associated with the delays in the payment of local contractors, which crimps their ability to engage and employ the structural engineers needed to carry out tasks (Drewer, 1980).

Globalization

The problem of globalization has impeded the ability of local construction companies to compete with foreign firms for jobs. Currently, numerous multinational corporations are relocating to emerging markets in developing nations (Wooldridge, 2010). Since these nations are predominantly developing, there is a high demand for all types of construction work (Jaselskis & Talukhaba, 1998). In addition to stimulus packages

designed to attract international investment and foreign businesses, many developing nations also offer tax incentives. Foreign contractors typically dominate the market for large projects in developing economies. In a study of contractor development in Nigeria, in which 69 local contractors and 71 professionals participated, Clay et al. (2014) discovered that foreign contractors carry out significant projects in the majority of developing countries due to a lack of local building capacity. Aniekwu's (1995) study of the contractor business environment in Nigeria uncovered the same result. To the detriment of civil engineers trained in these developing nations, these multinational corporations bring their own requirements. Clay et al. (2014) identified restrictions on local contractors in Nigeria related to uncertainties in supply and price of materials, receipt of milestone payments, procurement of labor, access to capital, negotiation of pay changes, access to plant and equipment, improper contract terms, maintenance of machinery and equipment, settlement of contract disputes, compliance with contract deadlines, project modification, incomplete contract documentation, and transportation. Particularly for SME contractors, access to funding sources is limited in developing nations (Gurgul & Lach, 2011). One of the most significant repercussions of this is that they are unable to meet the financial requirements (such as bids and performance bonds) necessary to secure crucial contracts that are typically awarded to their foreign competitors. These constraints impede their efforts to secure contracts that would serve as an inducement for hiring local civil engineers in the construction and planning processes (Habanabakize & Muzindutsi, 2015). This disadvantages local construction companies, as they lack the financial resources to hire expensive construction professionals and must therefore rely on unskilled labor. The financial challenges associated with hiring and retaining qualified civil engineers topped the list of concerns cited by all contractors (Holden & Sparmany, 2016).

Poor economic policies from external forces

External financial aid cannot be neglected while discussing the difficulties of civil engineering works in developing countries. In Zimbabwe, Zambia and others have borne the impacts of external help for development financing. This is always policy related to financial support that comes from bilateral or multilateral aids (Iacovoiu, 2012). Most countries, including China, attach strings to every bit of assistance given to poor countries, particularly when it comes to civil works such as trains, roads, and building, among other things (Beard et al., 2011). These contracts are typically granted to contractors from donor nations who are most likely to have their own team of structural engineers and therefore are tantamount to limited slots for the structural engineers in the developing countries. Numerous modifications must be made because this causes unemployment in developing nations, particularly among structural engineers (Bertolis & Hayes, 2014). Therefore, the need for human resources in externally financed construction prevents the employment of structural engineers from developing nations. Contractors in developing nations such as Ghana indicated that the majority of significant projects in Ghana are awarded to international firms. Once upon a time, the Association of Road Contractors (ASROC) Ghana advised the government that when a task is awarded to a foreign contractor, the company should be encouraged to subcontract approximately 25 percent of the work to

local contractors with established qualifications (Afonso & Sousa. 2012). However, the government has ignored the request. ASROC argued that many of the tasks performed by the foreign contractors' employees could be performed by local specialists and professionals. According to some contractors, some expatriates brought in to work for foreign construction companies do not even possess the necessary qualifications in construction (Bobeica et al., 2016).

Conclusion and recommendation

High economic growth in Africa and sub-Saharan Africa has not resulted in the creation of jobs. The region's persistently high unemployment rate continues to be a major development obstacle. Youth unemployment in Sub-Saharan Africa is double that of adults (12.8 percent vs. 6.5 percent) and nearly four times that of adults in North Africa due to the fact that population growth is primarily driven by young people (27.1 percent vs 7 percent) (ILO, 2012) Youth unemployment in South Africa exceeds 50 percent, while it exceeds 30 percent in three other nations (Robert, 2021). The unemployment rate is estimated to be 22 percent in the Middle East and North Africa and 17 percent in sub-Saharan Africa, which is significantly higher than the global average of 8 percent and Asia's rate of 5 percent. Botswana and Namibia's GDP growth exceeds 6 percent. In South Africa, the unemployment rate is approximately 3 percent, which is too slow and low to provide meaningful employment to the expanding population and labor force, particularly the youth. The low growth rate of Swaziland indicates that most emerging economies require additional development capacity to enhance their performance. National capacity support and progressive policies to identify and build rapid development capacities are required. Lack of skills and qualifications, education and training necessary for the workplace, and lack of work experience are additional causes of high youth unemployment. Employment opportunities in sectors such as agriculture and manufacturing are partially constrained due to the lack of skills especially for water and electricity. Lack of entrepreneurial skills is a problem, as is the lack of funding available to young people to explore business ideas that can create jobs and growth. A Strategy for Youth Unemployment in Sub-Saharan Africa. These initiatives include youth support, entrepreneurship training, farmer finance, education and training (including higher education), but there has not been much progress in service, especially among young people. Lack of youth participation in the formulation and planning of policies and programs is cited as a major cause of poor performance. Lack of commitment, the effects of weak transformation triangles, and the negative impact of rural and urban areas, as well as men and women, are issues that necessitate the program's further development. The inability to adopt measures to combat youth unemployment, specifically the gap between higher education and labor market demands, is a policy issue that requires additional attention.

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