The Growth of the Construction Industry in Kenya (1977 – 2019)

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Abstract
On account of the major role played by the construction industry all over the world, it has been noted that this fact has resulted in a number of researchers developing interest in studying the industry. In this regard, the researchers herein undertook to study the industry here in Kenya. The focus was on whether Kenya's construction industry is growing, stagnant or decelerating. To achieve this key objective, data was collected from KNBS and analyzed using graphical and exponential trend analysis methods. It emerged that growth in the construction industry in Kenya from 1977 to 2019 has been decelerating. Therefore, this paper recommends for a policy which encourages construction industry investment to enable the construction industry meet the rising demand for constructed facilities.

Keywords: *Constructed facilities demand, Construction output, Exponential trend analysis.*

INTRODUCTION

Construction industry is a major concern in any country due to its role in the economy. This is observable in the growing interest of researchers in different parts of the world who are coming up to study the industry. Good examples include researchers like Akintoye & Skitmore (1994), Bickerton & Grunerberg (2013), and Notman, Norman, Flanagan & Agapiou (1998). Akintoye & Skitmore (1994) and Bickerton & Gruneberg (2013) are some of the researchers who have studied the construction industry in the UK. Other examples of countries where the construction industry has been studied are Singapore and Kenya (Hua & Pin, 2000; Kivaa, 2008). Therefore, this is a key indicator of the importance of the construction industry to humanity.

In Kenya, construction industry is a major contributor to the country's Gross Domestic Product (GDP). This essentially implies that the industry is a very indispensable component to the economic development of the country. Further, in support of this notion, it is seen in the KNBS (2015), that the sector's contribution to the GDP was 11.1% in 2014. It was ranked in the second position amongst the main sectors driving the country's economy by 13.1% in the same year

(KNBS, 2015). In 2015, the sector grew by 13.6% as observed in Kenya's economic survey (KNBS, 2016). However, according to KNBS (2017), this sector decelerated in growth to 9.2% in 2016. This deceleration translates to 4.4% as compared to the sector's growth in 2015. This deceleration continued to persist through the following years, in 2017 and 2018 the industry recorded a growth of 8.5% and 6.3% respectively (KNBS, 2019). Therefore, this information is a clear indication of the slow growth and excessive fluctuations in growth of the industry. In this regard, this research seeks answers to the question of whether the construction industry in Kenya is really growing, stagnant or decelerating.

Apart from the sector's contribution to the GDP, it also contributes to offering solutions to two macro-economic problems which the country is currently grappling with, namely: housing and unemployment. According to the National Housing Policy (2004), inadequacy in housing provision to the country's ever-growing population is seen as a major problem in this country. Interesting enough is that construction industry, while providing a solution to the housing crunch, also provides employment to the unemployed. Taking the year 2015, for example, the construction sector employed 148,000 people up from 132,900 people

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it had employed in 2014 (KNBS, 2016). As a clear importance of the role this industry is playing in this respect, the employment volume into the industry continued to swell from the 148,000 in 2015 to 163,000 in 2016 (KNBS, 2017). The annual economic survey further observed that the industry employed 167,900 people in 2017 (KNBS, 2018). In 2018, this number increased by 2.2% and reached 171,600 people (KNBS, 2019). It is therefore clearly seen from the foregoing that the industry's role in job creation is very central. This dual importance of the industry does not need to be overemphasized. **Table 1** indicates annual growth rate of the construction industry and its contribution to the GDP between 2003 and 2018.

It is worth noting at this juncture that the findings herein are going to inform policy makers on the actual performance of the industry in Kenya. This shall guide them in formulating effective policies to accelerate the industry's performance towards achievement of the Big Four Agenda. From this perspective, the country shall also make a major stunt towards achievement of Vision 2030 as well.

THEORY

Construction Output

Construction output refers to constructed facilities. It is a common practice to use a technique of quantifying constructed facilities by way of expression into monetary values. This occurs while bearing in mind that the values of money are not themselves subject to investigation (Hillebrandt, 2000). In the country, the task to compile these quantities rest upon Kenya National Bureau of Statistics (KNBS). The KNBS carry out this exercise annually.

The principal responsibility of the country's construction industry is to ensure for adequate supply of actual constructed facilities which allow for other human activities to get some space for their operations (Hillebrandt, 2000). It was noted from Hillebrandt (2000), that the money expended in constructing every building structure together with all civil/structural engineering works in a given country/economy, within a specified time period- mostly a calendar year- is termed as that country's gross construction output.

TABLE 1: Growth of the construction industry in Kenya

Year	Growth rate (%)	Contribution to GDP (%)
2003	3	1.1
2004	3.5	2.6
2005	7.2	3.8
2006	6.3	3
2007	6.9	3.8
2008	8.2	3.8
2009	12.7	4.1
2010	4.5	4.3
2011	4.3	4.1
2012	11.3	13.1
2013	5.8	5.8
2014	13.1	4.9
2015	13.6	4.9
2016	9.2	5.1
2017	8.3	5.6
2018	6.3	5.4

Source: KNBS (2003 – 2018)

Based on Hillebrandt's argument, this output is approximated to be in the region of 10% averagely, based on the sum total of world's Gross National Product (GNP) (Hillebrandt, 2000).

Construction Output Growth Sustainability

The growth of construction industry is co-integrated with that of a country's GDP. This implies that, as a country develops, construction industry comes in handy in support of the infrastructure while trying to satisfy the rising demand for constructed facilities (Madya, Abdulllah, Chiet, Anuar & Shen, 2004). This is a major reason for branding construction industry as a key contributor to a country's economy as observed by various researchers around the globe. With this regard, growth rate sustainability of the industry in any economy has a potential of giving the economy of the relevant country an upward push. Otherwise, it poses a major setback to the same economy due to this central role of the industry.

A number of countries in Africa have performed well in so far as achievements of Sustainable Development Goals (SDGs) are concerned. The best performing country in Africa with the highest SDG score is Tunisia with an index of 71.4% (Sachs et al., 2020). This is an exemplary performance for an African country given that the highest score in the globe is 84.7% as observed in Sachs et al. (2020). In an attempt to give a clear understanding of the best Africa's performing countries in relation to these SDGs, the best six are tabulated in **Table 2**.

Based on **Table 2**, Kenya is doing quite well in terms of Sustainable Development Goals' achievement as compared to other African countries. This implies that if good understanding of construction industry's trend can be realized, then the industry can be put on a sustainable economic growth trajectory and eliminate the excessive fluctuations being experienced currently in the country. This being the key objective of this paper, chances shall be available for good policy which will put the industry on this path of economic growth sustainability.

RESEARCH METHODS

The key focus of this paper is to establish whether the construction industry in Kenya from 1977 to 2019 has been growing, stagnant or decelerating. This has caused a lot of concern over the years due to its inconsistency in growth behaviour as observed in Kivaa (2008). In order to achieve this objective, graphical and exponential trend analysis methods were used to help in understanding the actual trend of construction output in Kenya from 1977 to 2019.

Graphical method which has been widely used to describe trend in economic variables lies in statistical descriptive methods which cannot provide a conclusive answer whether the industry has been growing, stagnant or decelerating. For this reason, the researchers herein chose to establish this through the exponential trend analysis. The method has the capacity to answer the three questions. Graphical method was firstly carried out just to catch a glimpse of how the

TABLE 2: Best SDG Index Score in Africa 2020

Rank	Country	SDG Index Score (%)
1.	Tunisia	71.4
2.	Morocco	71.3
3.	Ghana	65.4
4.	Namibia	61.6
5.	Botswana	61.5
6.	Kenya	60.2

Source: Sachs et al. 2020

construction output growth fluctuated over the forty-three (43) years.

Time series data for construction output from 1977 to 2019 was collected from KNBS with the aid of a data sheet. This time series data was collected for a period of forty-three (43) years. Eviews version 10, a statistical computer software package, was used to analyse the quantitative data. This data was analysed and graphical and table outputs generated.

RESULTS AND DISCUSSION

The upward trend component is quite visible in this variable as observed in **Figure 1**. Though in the early years, 1977 up to around 1991, it appears the industry in Kenya was almost stagnant. It started picking up very slowly from the 1990s onwards though with fluctuations. This is not an ideal behavior of a construction industry of a developing country where a steady growth is highly expected. Therefore, from the observations made from **Figure 1**, the construction industry is not performing as expected.

Exponential Trend Analysis of Construction Output

The exponential trend analysis produced results as observed in **Table 3**. This method was adopted since use of a line graph as observed in **Figure 1** in trend analysis may not tell much about construction output in terms of its growth, stagnation and deceleration. The line graph falls in descriptive statistics which just describes the construction output as it is without making any inference. Therefore, application of inferential statistics is really essential in demonstrating this through exponential trend analysis where it is clarified if the output in Kenya is decelerating, stagnant or growing.

The exponential trend analysis results displayed in **Table 3** give the coefficient of the exponential trend as -0.0041. This means that construction output has not been growing from 1977 to 2019. The coefficient is negative and significant which is a clear indication that Kenya's construction output has been decelerating. These results are in concurrence with the current situation in the country where the constructed facilities demand is ever rising and the inability of the Kenya's construction industry in meeting this demand. These are quite important findings as regards to Kenya's construction industry growth unsustainability. Therefore, it is important to note that the growth being witnessed year after another in the country's industry is usually not an actual growth but a percentage change in the constructed facilities production. This may either present itself as an increase or a decrease. Therefore, what emerges from these results is that construction
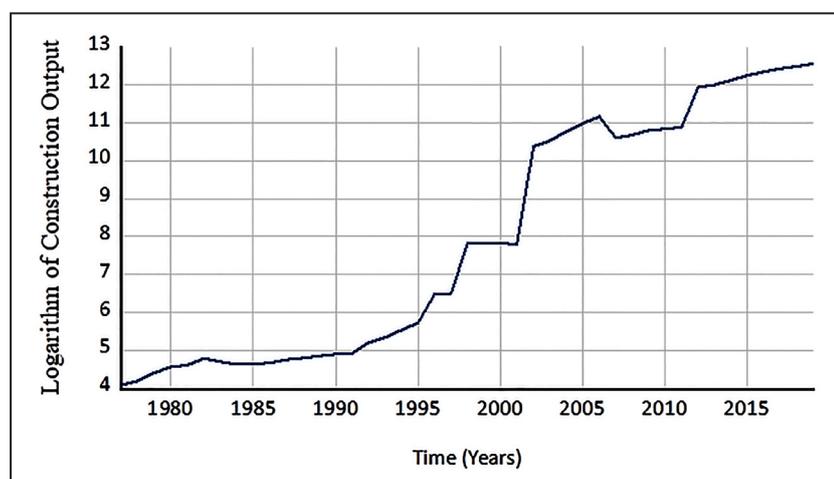
FIGURE 1
Logarithm of Construction Output (2009 Kshs.) 1977 – 2019
Source: Authors 2020

TABLE 3: Exponential Trend Analysis Results

Dependent Variable: LOG(CO)				
Method: Least Squares				
Sample: 1977 2019				
Included observations: 43				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
@TREND	0.473804	0.037845	12.51964	0.0000
@TREND^2	-0.004094	0.001150	-3.560797	0.0010
R-squared	0.779114	Mean dependent var		7.944210
Adjusted R-squared	0.773727	S.D. dependent var		3.180332
S.E. of regression	1.512826	Akaike info criterion		3.711232
Sum squared resid	93.83440	Schwarz criterion		3.793148
Log likelihood	-77.79148	Hannan-Quinn criter		3.741440
Durbin-Watson stat	0.109939			

Source: Sachs et al. 2020

industry's growth should be measured by how close the constructed facilities in a given year are to the targeted demand in that specific year.

CONCLUSION AND RECOMMENDATIONS

Based on the graphical and exponential trend analysis, it is concluded that construction output in Kenya from 1977 to 2019 has been decelerating. Excessive fluctuations are key indicators of this construction output behaviour in the country.

This paper therefore recommends development of a policy which is favourable to investment in the construction industry. This shall lead to increased production of constructed facilities towards satisfaction of the demand in the country. At the same time, the move shall enable the industry in Kenya to contribute a higher percentage share to the Gross Domestic Product (GDP) while creating more employment opportunities to the country's citizens.

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