

## **Global Construction 2030 Market at Top Three Nations**

Roberto Soares, PhD, DSc, MBA, AIC, DBIA, PE  
*Teaching Assistant Professor, East Carolina University, Greenville, NC, USA*

Amin K. Akhnoukh  
*Associate Professor, East Carolina University, Greenville, North Carolina, USA*  
*Akhnoukha17@ecu.edu*

### **Abstract**

The Global construction market is showing an increase in the needs of construction services over the years, it is forecasted that by 2030 the global construction market will be worth \$ 17.5 Trillion. Data from the Global Construction Report 2030 indicates that China, US, India will account for 57% of the total market worth value. The aim of this paper is to analyse the environment, the business opportunities and the objectives of these three countries using strategic management techniques as: PESTLE, SWOT, and SMART to provide convincing arguments for construction enterprises interested in service these countries. Dedicated analysis and recommendations for each country listed above will be provided.

### **Keywords**

Global Construction, PESTLE, SWOT, SMART, Business Opportunities.

### **1. Introduction**

Multinational construction organizations organize themselves to provide services and products under a global perspective of changing the landscaping of several economies with their participation in Engineering and Construction projects, enjoying the monetary benefits associated with these projects. The ENR Top 250 Global Contractors had \$ 501.14 billion in revenues in 2016 from projects outside their home countries, which represents 36% of their total revenues.

Global construction projects demand a more complex risk analysis study due the need to understand the impacts related with cultural issues, language barriers, religion influence, ethical standards, legal issues, compatibility of international engineering and construction standards, global environmental issues, inflation, construction material availability, lack of specialized labor, availability of heavy equipment, import/export policies, monetary policies to repatriate profits, and global terrorism issues.

The size of the Global construction in 2030 forecasted by Oxford Economics (2016) is \$17.5 Trillion, which is an increase of \$5.5 Trillion in the last 10 years (Ochieng et al, 2013). China, US, India, will be responsible to generate most of the investment of the total market worth value. To develop a scenario of the three Nations listed above, the PESTLE (Political, Economic, Social, Technological, Environmental factors), SWOT (Strength, Weakness, Opportunities and Treats factors), and SMART (Clear, Specific, Measurable, Achievable, Realistic, and Time factors) tools is used to evaluate the environment and the business opportunities. A discussion Economic, Social, Technological, Environmental factors) of the finds will be

provided, as well as recommendations, focusing the business opportunities at the global construction 2030 market.

## **2.0 China**

### **2.1 Environment (PESTLE Analysis)**

Political: Their Government sets formal and informal rules that firms must abide by. Their Government has taken interest in the development of e-commerce. The legal firm work for e-commerce is still in its infancy. Economic: China's GDP has grown over the past five years, forecasted to pass U.S. GDP in the coming years ahead. Factors that contribute this are; High rate of savings, abundant and skilled labor, more export business and potential urban growth. Social: The reversal of the One-Child Policy will support long-term growth. Family size and social behavior will impact how financial decisions are made. Technological: China does not have a safe and reliable online transaction system. Hints their Governments interest in development of e-commerce. Also, there has only been a one percent (1%) growth in credit card penetration in that country. Legislative: China is aggressively formulating legislation to accommodate the development of e-commerce. Environmental: With their populations heavy usage of e-commerce, this will decrease air pollutants created using vehicle emissions (PESTLE, 2016a)

### **2.2 Business Opportunities (SWOT Analysis)**

Strength: Accelerated economic development will continue to dominate light and medium-tech industries because of the large market in China and pool of labor. Will be one of the world's six (6) largest economies by 2020 with Japan, Indonesia, India, and Korea and the U.S., according to the World Bank. Weaknesses: Some disorder in the financial sector. Wage growth has not kept pace with inflation. Roads are jammed with thousands of bicycles, buses, trucks, and taxis. Average schooling term nationwide is only six (6) years. Opportunities: Demand for foreign loans to construct more than 30,000 km of rail lines and to build expressways and classed roads. Need for overseas investment in coastal ports since more than 90% of exports are carried by sea. Threats: Rapid internal changes in Chinese society. Must hire Chinese managers to better understand the role of courtesy, sensitivity, and perception in the culture (Helms,1999).

### **2.3 (SMART Objectives)**

Clear & Specific: China has built vast solar and wind farms, helping fuel the growth of major industries that sell their products around the world (CNN, 2017).

Measurable: Coal still makes up the largest part of China's energy consumption, but Beijing has been shutting coal mines and set out plans last year to cut roughly 1.3 million jobs in the industry. The Chinese government has also moved to restrict the construction of new coal power plants (CNN, 2017)

Achievable: China will account for almost a quarter of global construction activity by 2030, China economy is currently transforming himself into a consumer and service led economic growth story. (Oxford Economics, 2016). Realistic: Chinese government still recognizes that the economic opportunities of the future are going to be in clean energy," said Alvin Lin, Beijing-based climate and energy policy director with the Natural Resources Defense Council (CNN, 2017).

Time-Scaled: Analysts expect China to easily meet that target. Greenpeace noted in a report earlier this year that the country's clean energy consumption rose to 12% at the end of 2015. Renewable energy sources account for about 10% of total U.S. energy consumption, according to official statistics. To help reach the 2030 goal, China is betting big on renewable energy. It pledged in January to invest 2.5 trillion yuan (\$367 billion) in renewable power generation -- solar, wind, hydro and nuclear -- by 2020.

## **3.0 United States**

### 3.1 Environment (PESTLE Analysis)

Political: USA has a strong democratic setup and effective rule of law, with elections that are considered fair and transparent. The country enjoys massive political and economic influence over both national and global policymaking, and is recognized as the leading superpower in the world. Economic: With a GDP of over \$16.760 trillion, the US is the largest economy in the world. The economic system is well-developed and gathers its strength from its services and manufacturing industries. Social: US faces the problem of an aging population which can lead to a serious labor shortage and rising tax rates in the future. The education and healthcare system is one of the best in the world. Technological: Innovation and technology are the cornerstones of the US economy. Since its inception, the country has been leading in terms of adapting and applying technology. Though the country faces intense competition from rising economies, it is expected it will continue to retain a technology supremacy over its competitors. (PESTLE, 2016b) Legislative: United States an extremely competitive marketplace that rewards efficiency, productivity, and integrity while mandating rigorous compliance with the nation's complex rules and regulations. As the U.S. economy improves, the cost of doing business in the United States may rise. This would require a corresponding higher level of investment to compete with established domestic businesses. Federal, state, and local regulations require a thorough knowledge of tax, commercial, and labor laws. Environmental: Home to one third of the world's scientists and engineers, and accounts for one third of global R&D expenditure. Technological innovation within the private and educational sector has been increasing, with each sector accounting for 70.0% and 14.0% of innovations, respectively. The government's R&D is focused on defense (58.3% of its R&D budget) and the trend may continue for the next couple of years. ICT will also remain a driving force of the US initiative (Ogilvy, and Follow, 2016).

### 3.2 Business Opportunities (SWOT Analysis)

Strength: Highest value investment on R&D and Education. The world's largest economy, having GDP approximately \$14.26 trillion (2009), almost 3 times the size of Japan's economy (2<sup>nd</sup> largest economy). Weaknesses: A fiscal deficit that is increasing, external debt was \$13.6 trillion (2008), making it the biggest debtor country. Being called a "free market economy", the government regulates certain sectors especially the energy and the agriculture sector intensely. Opportunities: The country can support different adjustments by strong national saving that would avoid the burden of falling on both investment and growth. Treats: Deficit of the country has been coined as unsustainable according to IMF that would have undesirable effect on the interest rates and capital markets globally (Rind, C 2017).

### 3.3 (SMART Objectives)

Clear & Specific: According to a new report by Timetric's Construction Intelligence Center (CIC), the US construction industry is set to pick up over the next five years. ( Timetric,2017)

Measurable: Timetric forecasts that the construction sector's average annual growth is set to accelerate in real terms from 1.7% during the review period to 3.1% over the forecast period, increasing from \$1.0 trillion in 2014 to \$1.1 trillion in 2019 in real terms. (Timetric, 2027)

Achievable: Investments to modernize the country's aging infrastructure and renewable energy sector, alongside the growing population which will generate demand for residential buildings, will be part of a number drivers of this growth. (Timetric 2017)

Realistic: Residential construction was the largest market during the review period and will retain this position, mainly supported by the government's plans to increase the budget allocation by 1.9% to \$46.7 billion in 2015. The budget will support homeownership, sustainable community development and access to affordable housing to protect homeless and vulnerable families.

Time-Scaled: The country's total population is expected to increase from 321.2 billion in 2010 to 338.0 billion by 2020\*, which is expected to further increase demand for housing over the forecast period. (Trimetric, 2017)

## **4.00 India**

### **4.1 Environment: (PESTLE Analysis)**

Political: Being one of the largest democracies in the world, India runs on a federal form of government. The political environment is greatly influenced by factors such as government's policies, politician's interests, and the ideologies of several political parties. Economic: The country registered a GDP of \$5.07 trillion in 2013 following a further improved GDP growth rate of 5% in 2014 as compared to 4.35% in 2013. Social: India has a population of more than 1.2 billion people with about 70% between the ages of 15 and 65. Therefore, there are structures with percentages according to age. These structures contain varying flexibility, in education, work attitudes, income distribution, and so on. Technological: The country possesses one of the strongest IT sectors in the world, promoting constant IT development, software upgrades and other technological advancements. Recently, India has also attempted to launch their satellites into space. Legislative: Legal changes have been implemented in India, such as recycling, minimum wage increases and disability discrimination, which has directly affected businesses there. Environmental: the quality of air in India has been adversely affected by industrialization and urbanization, also resulting in health problems. As a result, there have been establishments of environmental pressure groups, noise controls, and regulations on waste control and disposal (PESTLE 2016c)

### **4.2 (SWOT Analysis)**

Strength: Skilled workforce and huge talent pool (4.4 MN graduates and postgraduates join the workforce annually). Specialized labor pool from existing knowledge process outsourcing (KPO) (India was the first to enter the outsourcing and offshoring market). Favorable and supportive policies for offshoring. Larger English-speaking workforce, compared to other offshore destinations Weaknesses: Time-zone difference with the US. Focusing on developing infrastructure in tier-II cities, but experienced talent pool is not ready to move there. Tier-II cities lack in skill availability at mid- and senior-level management. Opportunities: Tier-II cities are one of the most cost-effective destinations in the world Increase in workforce and talent pool in tier-II cities. Treats: Rising operating costs in tier-I cities (salary increase and rise in rentals). Competition from new offshoring locations such as China and the Philippines (Reporter, B 2013)

### **4.3 (SMART Objectives)**

Clear & Specific: India will become the world's third largest construction market by 2025, adding 11.5 million homes a year to become a \$1 trillion a year market, finds a new study by Global construction perspectives and Oxford Economics (Economicstimes, 2017).

Measurable: Mr. Lafont points out that Lafarge opened a research laboratory in India to promote innovations "that are closer to the market, even for traditional methods of construction." His focus is going to be on India's booming Tier 2 cities, and not just in any one region (Economicstimes, 2017).

Achievable: Lafarge would like to see in India is a "simplification of the framework of regulations so projects can move faster," clarifying that this is not a unique Indian problem, it is also the problem with many European countries. (Economicstimes, 2017).

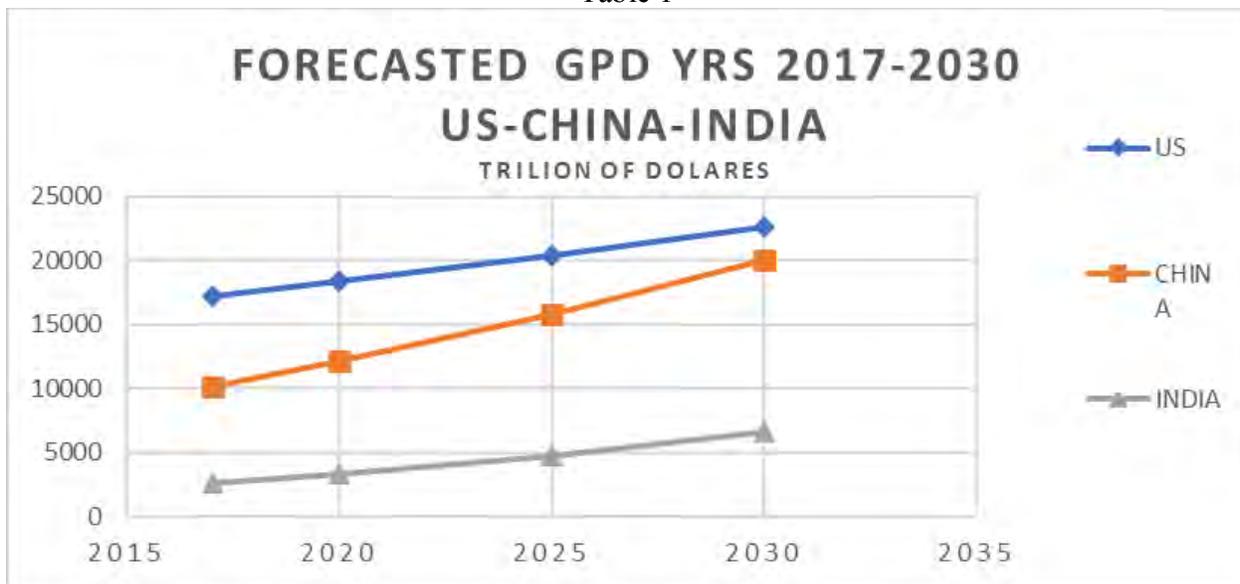
Realistic: Speaking to ET, Bruno Lafont, chairman and CEO of international cement major Lafarge said that this benchmark study reinforces why Lafarge finds India attractive, even though the study has reduced India's short-term growth prospects. "The attractive growth of the construction industry will be higher than the short term economic growth (Economicstimes, 2017).

Time-Scaled: The GCP study also predicts that while India's infrastructure market is expected to grow at around 8%, the fastest among its sector, India is unlikely to achieve its plan target of \$1 trillion investment in infrastructure, given the shortage of financing (Economicstimes, 2017).

## 10. Discussion

The most recent GDP values projected for all Economies of the world, was released by the Economic Research Service of the USDA in December 2017, and shows a USA GDP value of \$17,236 trillion dollars for year 2017, which confirms that in terms of GDP the USA economy is the strongest in the world. The second largest projected GDP for year 2017, is the on for China with the value of \$10,123.07 trillion dollars. Considering the growth rates of these two economies it is projected that by the period 2030-2035 the China GDP will be overtaking USA (Table1).

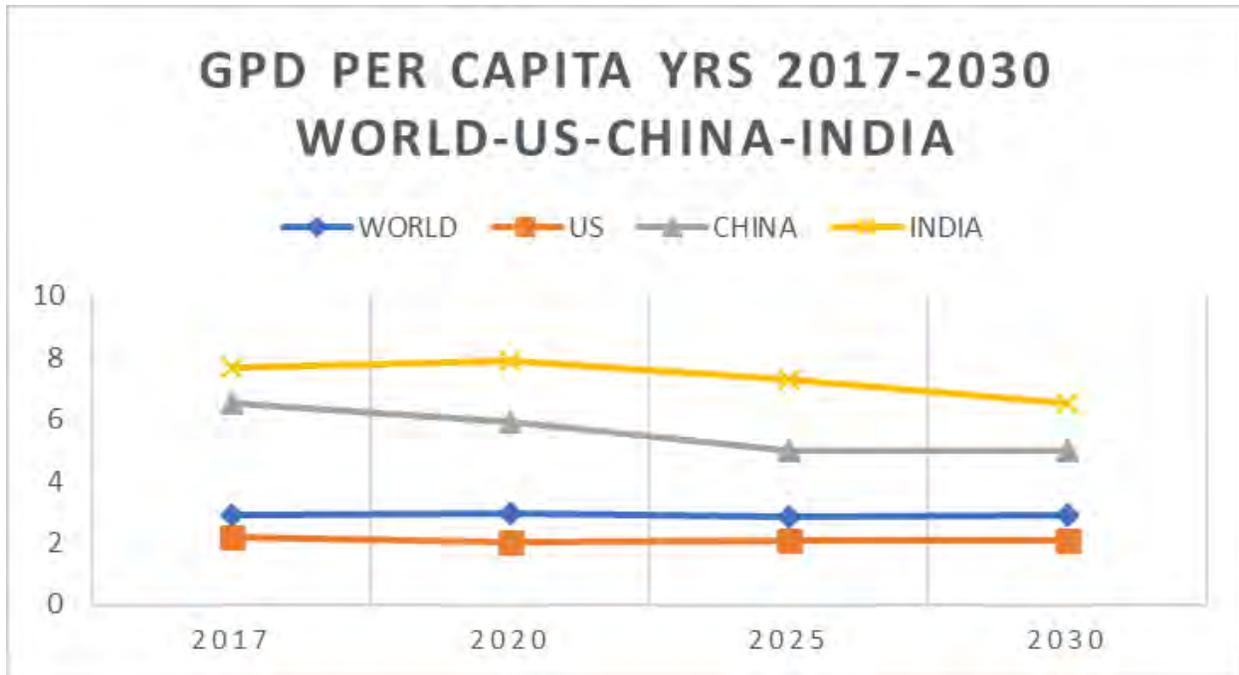
Table 1



Source: USADA United States Department of Agriculture, updated 12/06/2017

The GDP projected for India for Year 2017 is 2638.58 trillion dollars, and for year 2030 it will be in the value \$ 6626.29, which indicates 151.51% increase in the period. Comparing data from the three Nations of this study, India shows the fastest growth rate between the three Nations (Table 2). The GDP per capita for years 2017-2030, indicates that India and China will have a GDP per capita growth highest than the GDP per capita of the world, and the USA will have a GDP per capita growth lower than the GDP per capita of the world. Since GDP per capita is calculated by dividing the GDP by the population, it is necessary to analyse the population increase trend of each Nation. The population growth rate for China in year 2030 is projected to be negative in the value of -0.124, which explains why the projected GDP per capita of China is above the world GDP per capita value. What is interesting is that the Projected GDP per capita for India for the period 2017-2030 indicates an increase in the population and a positive population growth rate by 2030 in the value of 0.862, which is an explanation with the India economy turnover for the same period is more efficient than the ones at China and USA economies.

Table 2



Source: USADA United States Department of Agriculture, updated 12/06/2017

The Oxford Economics ranks China Economy as the main investor in Global construction by year 2030, accounting for 25% of the total forecasted Global construction market 2030. The second and third investors are respectively, USA and India that will be accountable for 32% of the total construction market in 2030. Following is the summary of each Nations construction needs and they justifications:

### 10.1 China

China's plan for a "Silk Road" will connect over 60 economies which will greatly increase trade and bring investment to the country. Plans include modernizing road and rail links and by 2025, China continues to be the largest construction market in the world, nearly twice the size of the US market. 36% of all global construction growth through 2025 will be in China. By 2030 the amount of investment forecasted to China is 25% of the \$17.5 Trillion. The aging population is increasing and the need for hospitals and health service facilities will be required. China exports 90% of its goods via sea transportation. With such a large investment being made available to help strengthen the connection of the global community's commerce. The business practices standards related to construction indicates that work relations are governed by the Minimum Wage Act of 1948 that requires permission to lay off workers if business has more than 100 employees, construction sites are described as war zones due to the high number of accidents and death on sites, Corruption is a problem, and bribery speeds up the government procurement system for licenses, permits and occupancies certificates (Yates , 2007) The types of construction services identified for China are: Housing, Transportation, Hospitals & Health Services, and Infrastructure.

### 10.2-United States

By 2030 the USA will sit as the second largest construction market globally. The current construction market is nearly recovered from the fiscal crisis of 2008, aside from Florida which remains at nearly 50% of what it was in 2006. The current politics of the USA has had a recent impact on the construction environment by making manufacturing products outside of the to sell within the USA more expensive due to import taxes than the costs to build the product within the USA. It is expected that because of these taxes

and the rapid growth of China, it is expected that manufacturing within the US to be substantially cheaper than China. A major issue for the USA is the aging infrastructure. It is expected the USA will need \$3.6 trillion in infrastructure upgrades by 2030. Four major cities make up nearly 20% of all construction within the USA so heavy concentrations of construction organizations exist in New York City, Houston, Los Angeles and Chicago. The amount of investment forecasted by 2030 is 15% of \$17.5 Trillion. The types of construction services identified for US are: Housing, Manufacturing, and Infrastructure.

### 10.3 India

India is one of the most rapidly growing construction markets, predicted to take over the number three spot from Japan by 2030. They are predicted to add \$1 trillion to the global growth at a rate that could reach double that of China over the next three years. India does have a substantial issue for construction, they are ranked 90 out of 144 countries in terms of infrastructure and 103 out of 144 countries for electrical infrastructure. The business practices standards related to construction indicates that work relations are governed by the Minimum Wage Act of 1948 that requires permission to lay off workers if business has more than 100 employees, construction sites are described as war zones due to the high number of accidents and death on sites, corruption is a problem, and bribery speeds up the government procurement system for licenses, permits and occupancies certificates (Yates , 2007). India's culture can have an impact on their ease of business, with the country being ranked 130 for ease of use. India does not have the financial instructions in place to finance the necessary infrastructure upgrades which requires them to venture outside of the country for funding. India is by far the best opportunity for home construction, being they have the largest housing market in the world with a need for 170 million homes over the next 15 years. The Oxford Economics (2016) states that "India needs to build 31,000 new houses a day over the next 15 years to meet the needs of its rapid growing and urbanize population". The housing demand creates a further issue when combined with their infrastructure problems, but the right contractor can turn these issues into substantial opportunities for growth. Being able to not only build the homes and the infrastructure or bring on the appropriate people and funding to build the infrastructure is an exponential growth opportunity. As infrastructure is upgraded, the expansion rate of the economy in the nation will grow driving construction up along with it. The types of construction services identified for India are: Housing, and Infrastructure.

### 11.0 Conclusion

The common need for Global construction projects among the countries analyzed shows that Infrastructure and Housing projects are in highest demand, covering the spectrum of rehabilitation of old structures up to new investments in those areas. Hospitals, Health Service Facilities and Transportation projects are also identified, and the common denominator is that majority of the projects solicited are classified as Mega projects. In terms of business opportunities all three markets will welcome global construction expertise to comply with the needs of each Country. Global construction organizations that can offer high bond capacity and expertise to offer design-build services to Global Engineering projects, seems to be the best fit for all three Countries, as well as construction services to attend residential projects. There are some barriers and risks that needs to be evaluated. In terms of language barriers, China is the only economy in which English is not the official language, but it is used as business language. In India, corruption, bribery, and terrorism, are issues that can be managed. Even with barriers and risks associates, the Global construction market 2030 is a solid business opportunity for constructions organizations.

#### REFERENCES

- [1] PEST Analysis of China. (2016, June 21). Retrieved September 10, 2017, from <http://pestleanalysis.com/pest-analysis-of-china/>
- [2] Helms, M. (1999, Dec.). How to be successful in China: A SWOT analysis. Competitiveness Review: An International Business Journal incorporating Journal of Global Competitiveness, 9, 1-10. Retrieved September 10, 2017, from [https://www.researchgate.net/publication/242078055\\_How\\_to\\_be\\_successful\\_in\\_China\\_A\\_SWOT\\_analysis](https://www.researchgate.net/publication/242078055_How_to_be_successful_in_China_A_SWOT_analysis).

- [3] PEST Analysis of USA, the Largest Economy of the World. (2016, June 21). Retrieved September 12, 2017, from <http://pestleanalysis.com/pest-analysis-of-usa/>
- [4] Ogilvy & Mather Follow. (2016, December 05). Political, legal & technological environment of USA. Retrieved September 12, 2017, from <https://www.slideshare.net/runrabbit21/political-legal-technological-environment-of-usa>
- [5] Rind, C., America SWOT analysis. Retrieved September 12, 2017, from <http://www.freeswotanalysis.com/country/131-america-swot-analysis.html>
- [6] PESTLE Analysis of India in five Steps. (2016, June 20). Retrieved September 14, 2017, from <http://pestleanalysis.com/pestle-analysis-india/>
- [7] Reporter, B. (2013, July 03). SWOT analysis | India as an offshoring destination. Retrieved September 14, 2017, from [http://www.business-standard.com/article/economy-policy/swot-analysis-india-as-an-offshoring-destination-113070300226\\_1.html](http://www.business-standard.com/article/economy-policy/swot-analysis-india-as-an-offshoring-destination-113070300226_1.html)
- [8] Rahul Wane, Pre-Sales Consultant at e-Zest Solutions Follow. (2014, January 20). Indonesia: Country Analysis (International Marketing). Retrieved September 14, 2017, from <https://www.slideshare.net/rahulwane/country-analysis-indonesia>
- [9] Mitropoulos, A. (n.d.). UK PESTLE Analysis. Retrieved September 14, 2017, from [http://www.academia.edu/8993883/UK\\_PESTLE\\_Analysis](http://www.academia.edu/8993883/UK_PESTLE_Analysis)
- [10] The UK in a Changing Europe. (n.d.). Retrieved September 15, 2017, from <http://ukandeu.ac.uk/uks-eu-membership-strengths-weaknesses-opportunities-threats/>
- [11] Pestle Analysis on Mexico. (n.d.). Retrieved September 15, 2017, from <https://www.ukessays.com/essays/economics/pestle-analysis-on-mexico-from-business-economics-perspective-economics-essay.php>
- [12] Post, S. T. (2014, October 08). Infographic: A SWOT analysis for investing in Mexico. Retrieved September 17, 2017, from <http://business.financialpost.com/investing/global-investor/infographic-a-swot-analysis-for-investing-in-mexico>
- [13] PESTEL ANALYSIS OF CANADA. (n.d.). Retrieved September 17, 2017, from <https://www.scribd.com/doc/47703002/PESTEL-ANALYSIS-OF-CANADA>
- [14] SWOT Analysis of Canada. (2016, June 15). Retrieved September 19, 2017, from <http://pestleanalysis.com/swot-analysis-of-canada/>
- [15] Nigeria. (n.d.). Retrieved September 19, 2017, from <https://www.marketresearchreports.com/countries/nigeria>
- [16] Doing Business in Nigeria - PESTEL Analysis. (2016, October 27). Retrieved September 20, 2017, from <http://legitsmallbusiness.com/nigeria/>
- [17] PESTEL Analysis in Nigeria. (n.d.). Retrieved September 20, 2017, from <https://www.scribd.com/doc/135361061/PESTEL-Analysis-in-Nigeria#>
- [18] Babalola, Y. (n.d.). SWOT Analysis of Nigerian Business Environment. Retrieved September 22, 2017, from [http://www.academia.edu/3658408/SWOT\\_Analysis\\_of\\_Nigerian\\_Business\\_Environment](http://www.academia.edu/3658408/SWOT_Analysis_of_Nigerian_Business_Environment)
- [19] China is crushing the U.S. in renewable energy. (n.d.). Retrieved September 22, 2017, from <http://money.cnn.com/2017/07/18/technology/china-us-clean-energy-solar-farm/index.html>
- [20] Five-Year Outlook for US Construction Industry Looks Brighter. (n.d.). Retrieved September 23, 2017, from <http://www.forconstructionpros.com/business/news/12107494/five-year-outlook-for-us-construction-industry-looks-brighter>
- [21] India to be world's 3rd largest construction mkt by 2025. (n.d.). Retrieved September 24, 2017, from <http://economictimes.indiatimes.com/india-to-be-worlds-3rd-largest-construction-mkt-by-2025/articleshow/20856489.cms>
- [22] Construction in Indonesia -- Key Trends and Opportunities to 2021. (2017, July 05). Retrieved September 24, 2017, from <http://www.pnewswire.com/news-releases/construction-in-indonesia---key-trends-and-opportunities-to-2021-300483866.html>
- [23] Designing Buildings Wiki The construction industry knowledge base. (n.d.). Retrieved September 29, 2017, from [https://www.designingbuildings.co.uk/wiki/UK\\_construction\\_industry](https://www.designingbuildings.co.uk/wiki/UK_construction_industry)
- [24] Mexico Infrastructure & Urban Sustainability Review. (n.d.). Retrieved September 29, 2017, from <http://mexicoinfrastructurereview.com/2018/ch7/index.html>
- [25] Construction in Canada Key Trends and Opportunities to 2021. (2017, July 05). Retrieved September 29, 2017, from <http://www.pnewswire.com/news-releases/construction-in-canada-key-trends-and-opportunities-to-2021-300483727.html>
- [26] Global Construction Forecasted to Grow 70% by 2025. (2014, April 15). Retrieved September 29, 2017, from <https://www.aconex.com/blogs/2013/07/global-construction-forecasted-to-grow-70-by-2025.html>
- [27] Global Construction 2030. (n.d.). Retrieved September 29, 2017, from <http://www.globalconstruction2030.com/>

<https://www.pwc.com/gx/en/engineering-construction/pdf/global-construction-summit-2030-enr.pdf>

[28] GBC, 2016 Global Business Guide. *Indonesia*. Taken from website: <http://www.gbgingonesia.com/en/pieddepage/about.php>. Global Business Guide: Paris.

[29] Build Force Canada (2017). *Global Trends: Emerging Construction Labor Markets*. Taken from website: [https://www.constructionforecasts.ca/sites/forecast/files/pdf/2017\\_Global\\_Trends.pdf](https://www.constructionforecasts.ca/sites/forecast/files/pdf/2017_Global_Trends.pdf). Build Force Canada: Toronto

Yates, J.K. (2007) *Global Engineering and Construction*, John Wiley & Sons, Inc.

Ochieng, E. et al (2013) Palgrave Macmillan First Edition 2013.