The Role of International Construction for the Development of Economy and the Challenges Involved

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Abstract:
Construction industry has been booming without interruption and its contribution to the development of economy in general and economy of individual country of the world in particular has also become remarkable in the recent decades. The need of infrastructural developments and the number of international construction enterprises (overseas experts, contractors, consultants, construction managers having desire to participate in such developmental project, in particular in the developing countries) is increasing. Recently, international construction (IC) has obtained special attention, and many research papers in the area have been published, reflecting its role for the development of the global economy, the factors and challenges it is encountered with. However, the research papers deal only with particular issues/problems prevailed in international construction, and never give a comprehensive picture of the international construction. Thus, the objective of this paper is to amplify the role of international construction for the development of economy, its trends and complexity; identify driving forces for the need of international construction and try to dig the challenges involved and then propose mitigating mechanisms for such challenges. Research approach employed is qualitative, to qualify opinions, suggestions and arguments reflected in the books, journals, articles of notable writers on international construction. Special attention was given to the reviews of empirical materials – regarding factors and challenges involved in the international construction; internet sources related to the topic have also been reviewed, to make the paper up to date. The findings obtained show that, there is a shift of construction industry development from developed nations like US, Europe to the developing nations. The need of foreign expertise in the developing countries continues due to the constant increases of the need of infrastructure development, lack of technology, and skilled man powers in such countries. It was found also that political instability, social, and cultural barriers continue to be pressing challenges for the international contractors. The study concludes that international construction need is continuing to develop even in the environment of challenges involved. It is recommended that international construction companies are better to critically evaluate the situations that may hinder their activities in the host countries before signing the contract and the host countries on the other hand to eliminate situations hindering the international construction companies to work with them.

Key words: International Construction, International Companies, Foreign Contractors, Host Countries, International Construction Challenges.

Part I: Introduction
The construction industry does not have clearly defined borders and its characteristics range from simple to complex. Construction supplies basic materials (such as aggregate, cement, steel reinforcement, and pre-packaged mixtures) right up to cutting-edge technology developed and used by experts. The diversion of water courses, land reclamation, houses, shopping centers, offices, factories, healthcare facilities, and large infrastructure-related civil engineering works such as bridges, tunnels, highways, airports, harbors and other installations such as water treatment plants, dams, nuclear power plants, wind power plants, and projects in the field of electricity generation are all what to mean by construction.

Other construction spheres, such as factories, warehouses, and production lines that serve other industries (including mining and research centers) can also be mentioned. The particular activities relate not only to new construction works, but also repairs, extensions, reconstructions, and demolitions are also part of construction. If construction includes all activities listed above, then what is meant by the term “International Construction”? The word “international” is consisted of two separate words, “Inter” and “National”. “Inter” refers to the other terms-“cross boundary, beyond the defined territory or inter relation, the relation that becomes beyond one country or region”. The word “nation” derived from Latin word “gentium” meaning “nation” which is referred to the people. Thus, International Construction can be termed as construction activities carried out abroad by companies or people, residents in another country.

Very few definition of International construction can be noticed in literature.

Mawhinney M. defined international construction as "...where one company, resident in one country, performs work in another country...".

He argued also, that the American large construction company, Bechtel, exploited its closeness with the US government to

1 Lukas Klee(2018), International Construction Contract Law 1st edition, Prague, Czech Republic
2 Ibid

http://ijesc.org/
enter Japanese and Persian Gulf markets during the ’80s and ’90s.

This definition has been adopted in many studies related to the international construction industry. For example, Arditi and Gutierrez used the term “foreign construction market” referring to those projects conducted by contractors outside of their own home countries. They further explain that Turkish enterprises gain advantages from doing projects in Islamic regions such as the Middle East and North Africa.

In addition to the above given definitions, the writer gives the following definition. Accordingly, international construction can be viewed also as:

- An activity carried out by different subjects from different countries;
- The word “subjects” refers to physical persons or legal persons or multi-national firms. Multi-national firms in the construction industry are those firms concerned with planning, consulting, design, construction or any combination of these activities on an international level.
- As a services (construction activities) rendered in one or in more than one foreign countries; caretakers.
- The term “services” refers to professional services rendered by contractors, engineers, consultants, architects in foreign countries.
- As a situation where the client receives services from overseas construction companies;
- As a process of rendering professional services by one or more than one foreign companies and transfer of construction technologies to one or to more than one countries. Professional services rendered by international construction actors (multinationals) include feasibility studies, planning, design, supervision and management of construction and economic development planning, for the clients.
- As a project funded by international financial institutions. International Construction Project is implemented by overseas, more skilled professionals, since local enterprises lack such skills.

Many of the construction projects which the nations require for their socio-economic development are beyond the capability of the countries to undertake, owing to the size, novelty and complexity of those projects.

**Historical Remark of Construction and International Construction**

The remarkable buildings available today in the world could not emerge at once, in steady numerous centuries passed to step in having such type of buildings. The early building materials were perishable, such as leaves, branches and animal hides. Buildings from such materials were very weak and temporary. Later on, buildings from more durable materials, such as clay, stone, timber, and finally, synthetic materials, such as bricks, concrete, metals, and plastics were started to be built. Among the remarkable Ancient Neolithic or Old Stone Age roughly from 9000 B.C to 5000 B.C proto building, the Skara Brae in Scotland can be mentioned. Later on, the copper and bronze construction was began before 5000 B.C and around 3100 B.C respectively. Tools, such as axes and chisels, as well as saw were made up of copper and bronze. It was after 1200 B.C to 50 B.C that iron started to be used for tools like weapons and steel production. However, human mind was required to improve buildings and building materials. Imhotep, who lived in Circa 2650 – 2600 B.C is credited with being the first recorded architect and engineer and remarked the beginning of the ancient Egyptian technology. The largest Egyptian pyramid so called pyramid of Giza that remained the tallest structure in the world for 3800 years remarked the beginning of construction technology in Ancient Egypt. The Ancient Greek temples built of woods in 650 B.C, a temple made of Roman concrete in the 1st century B.C, using of geass by Romans for architectural purpose after about 100 BC, the invention of lifts by Romans and Greeks to lift heavy stone work to the upper part of buildings paved away for the further development of construction activities.

The history of International construction began with the dissemination of culture, construction practices that crossed the boundaries. For example ancient Greek culture and philosophy had a powerful influence on the building techniques of Romans. On the other hand the Roman Empire’s expansion (100 B.C – 400 A.D) throughout Europe, Africa and Middle East facilitated advancements in production of building materials and development of infrastructure. The period of Renaissance in Europe from 14th to 17th century remarked a bridge between the Medieval Ages and modern history. This
period was termed as intellectual base for building design and construction techniques that transformed construction\(^1\). British contractors also played a role for disseminating construction practices to other countries through moving heavy construction machines to Africa, Canada, India, Argentina and Australia\(^2\). On the other hand, the flow of the people from the old world to the new world to pursue economic opportunities in industrialized countries became another reason for the sharing construction practices and know-how and spread of construction technology throughout the globe\(^3\).

The emergence of international construction companies had already began in 1840s and rapidly increased in the late 20\(^{th}\) and 21\(^{st}\) century. Among the notable international contractors, Thomas Brassey (1805 - 1870), Samuel Morton Peto (1809 - 1889), and Edward Betts (1815 – 1872), well known British railway contractors noted in transferring railway construction techniques throughout the world, can be best mentioned\(^4\). Another remarkable British international contractor, who capitalized construction firms on the international market was W. man Pearson who, completed a total of 66 projects with a combined value of $ 42.5 million between 1884 and World War I (1914), whose 62\% of contract revenues were from outside of the United Kingdom. American contractors were very busy in the domestic construction affairs, when British construction companies were doing well in overseas. However, beginning in the 20 century, several large construction firms, including Warren, Bechtel, Fluor, Kellogg and others, successfully penetrated the international construction market\(^5\). Currently, the rapid growth of international construction companies is increasing from time to time, what is supported by display of Engineering News Record (ENR) annual statistics. For example, some well known international constructors like Chinese Power Construction Corporation, Skanska AB, (Swedish contractor), Bauygues (French contractor), Strabag (Austrian contractor), Hochtief (German constructor) etc. can be best mentioned among the top ten international contractors according to ENR\(^6\).

**Scope of International construction**

- **In terms of its scope** international construction activities can be sub-regional, regional or universal.

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1. It was in this period that Andrea Palladio, one of the most influential figures in the history of architecture published his treatise I (the four Book of Architecture) in 1570 addressing building materials and techniques which were regarded as the foundation for professionalism and experimental science for building.
3. For example, in the early stages of Industrialization (1880s), 41% of construction workers, 57% manufacturing workers, and 41% of the rail way workers in the USA were immigrants or the children of immigrants (see Hirschman, Emogford, Immigration and the American Industrial Revolution from 1880s to 1920, social science Research, 38(4), 2009,897 - 920).
5. See Sebesyen G. Construction Craft to Industry (London, and New York, E@FN Spoon, 1998);
7. It is sub-regional when one construction company from Western Europe carries out its construction activities in Western Europe, or it is regional when one construction company from Western Europe carries out its construction activities in the Eastern Europe, or it is universal where one construction company from Asian continent carries out its construction activities in African continent or Latin America.

**Nature of International Construction**

International Construction as its name clarifies is trans-boundary in nature, that is, the professional services are to cross the boundary and rendered in the another or other host countries\(^8\). International Construction involves different subjects- physical persons of different countries or multinational firms for the completion of over sea projects. On the other hand international construction is influenced by internal and external factors. The term internal factors refer to the internal strength or the weakness of the firms carrying out international construction business abroad and the external factors on the other hand refer to the construction business opportunities available in the overseas countries, as well as threat or barriers that challenge the international construction companies for properly carrying out its activities\(^9\). When the phrase “International Construction” sounds, it is prima face that at least more than one skilled man power from more developed countries involve in the Construction projects and there is direct interaction between these skilled people and local unskilled or less skilled people. It is believed that multinational firms with high technology and high skills will transfer their immense knowledge to the local people, that later on enable them adopt the technology. The other nature of International Construction is that it involves foreign elements that are facts, subjects and juridical acts.

To make more clear about foreign elements, the following hypothetical illustration is helpful. Assume that Ethiopian origin X company, bought construction equipment manufacturing factory from Chinese origin Y company, Z. Nigerian construction equipment supplier in Africa concluded a contract of sale of bulky construction equipments (produced in China), with X, in London, where 50\% of the total sale of the equipments paid just when the contract of sale was made in London. In this scheme, fact is the construction equipment manufacturing factory located in China; subjects are “X” and “Y” companies, who concluded contract of sale in London. Juridical act is the contract itself that was concluded in London. In this complicated relations, what would happen if for example, “X” fails to deliver to “Z” the said equipments, in the manner indicated in the contract agreement? Which law, Chinese, English, Nigerian, or Ethiopian to be applied to resolve the dispute arisen between “X” and “Z”?

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8. In order to be construction contractual relation obtains status of IC, the services intended to be rendered or the service providers are to cross boundaries.
9. In nature; it involves different legal persons or different, citizens who, come together to perform a single project.
10. International factors like human resources, finance and current technology and external factors, customers, weather condition which are un controllable factors much affect international construction (See https://www.clear pointsstrategy.com accessed, Oct. 22, 2020).
The need of transfer of technology

“Technology” (“know-how”) is uninterrupted innovation of human mind. By effort or by chance some countries of the world surpass other counties by their technology – construction technology. The poor indebted courtiers are in need of such construction technologies. However, as whether developing nations are beneficiaries of the technology transfer in construction industry, different writers pose different ideas.

Some authors see foreign constructors as the sole factor, influencing the development of the construction industries of poorer countries. The other authors suggest that in the long term the gap between local construction firms and their foreign counterparts in the technology, finance and management “know-how”, could be filled through technology transfer. For example, via joint venture among the two groups of firms. Some the 3rd authors yet justify the fact that some countries benefited from the foreign technology growth transfer, noting that Japanese and South Korean contractors benefited from technology transfer from their US counterparts. Some other authors stood with the reverse position. These authors have mentioned the difficulties involved in technology transfer, including the tendency of foreign contractors to adopt strategies which do not support host countries efforts to develop their industries. These authors believe that foreign firms are not keen to effectively transfer their technology, since it means they would be nurturing their future competitors. 5th group of authors are of the opinion that both local and foreign contractors are benefited from the international construction operation.

Proceeding from the above counter arguments regarding the role of foreign constructors to transfer technology to the local constructors, (may it be with limitation) the transfer of the technology to the local contractors cannot be ignored. The generosity of foreign contractors to transfer technology to the local contractors can enable them to compete the market available in the host country. If foreign contractor is so greedy to transfer its “know-how”, then it is up to the host country to decide whether to proceed or not construction industrial relations with it. The remarkable pant construction industry is not the completion of the project and delivery of it in the host country as per time, quality and cost, but the transfer of the technology related to the facilities constructed.

2) The need of international funds

Especially, in developing countries where mega construction projects designed for nations, such as dams, tunnels, hydroelectric power stations, wind power constructions, which construction requires up to date sophisticated technology, contractors in the developing countries cannot overtake such projects due to the lack of skilled manpower and technology.

In this case, the clients (project owners) from developing countries go for search of more skilled foreign contractors with more technologically familiar and experienced in such projects. Such mega projects commissioned by the well known

References

4. Large Industrial and public world projects often require highly sophisticated Technology for their planning, design, and construction where, only multinationals can have the requisite skills and expertise. (see Moavenzadeh, the Construction Industry in Developing Country)
international constructors require a huge budget which cannot be afforded by the project owners. Thus, searching for international financial institutions like IMF, World Bank, European Reconstruction and Development Bank, African Development Bank is an inevitable. In this case only the involvements of international finances make possible the implementation of several projects such as those of major infrastructure.

3) The increase of urban population

In principle where there are people, there is construction. Moreover, the more the population increase the more construction needs to increase. One of the driving forces for the increase of the international or local construction is the increase of urbanization. For example, it is estimated that global population is to grow to 9 billion by 2050, with 2/3 of people predicted to be living in cities. It is estimated also that the world population is likely to be around 10 billion people by 2062. From 35% in 1980, now more than half people of the world live in cities. Obviously, if this trend continues, the equivalent of today’s entire population that is more than 7 billion people could be urbanized by 2062. Another reason why construction is needed is that the population of the world’s urban areas is increasing by 200,000 people per day, all of whom need affordable housing as well as social, transportation and utility infrastructure.

Thus, this an inevitable increase of world’s population in the future will accompany with the extreme needs of the local and international constructions.

4) The need of international communication

The world has been in the process of globalization in the environment of diverse cultures, legal social systems, and beliefs. Globalization or internationalization process cannot be effectuated without communication through water ways, roads, air transport.

China’s Belt and Road Initiative (BRI) launched in 2013 by President Xi Jing Ping sometime referred to as the New Silk Road, for example, is one of the more ambitious infrastructure projects ever conceived. Today, more than 60 (sixty) countries accounting for two-third of the world’s population have signed to projects or indicated interest in doing so. The vision of BRI includes creating a vast network of railways, energy pipelines, high ways and streamlined borders crossing both westward through the mountainous former Soviet Republic and southward to Pakistan, India and the rest of South Asia. In total China has already spent an estimated $200 billion to effectuate such efforts and it is predicted that China’s expenses over the life of the BRI could reach $1.2 – 1.3 trillion by 2027.

5) The aspiration of nations to see a sophisticated construction industry results.

The more the country is modernized and economically developed the more its desires to do something that makes it unique in the world. That is, why an unimagined underground tunnels, unbelievable and extremely remarkable buildings have started to appear in the world.

Among the buildings, we can see the Malaysia distinctive post-modernist towers that have come to symbolize Malaysia, opened in 1997. It was designed with Islamic motif, being influenced by the Muslim religion, having the plates of the 88 floor towers with its 1,483 foot high. The elevators take just 90

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1 See Challenges of Construction Industries in Developing Countries: Lesson from Various Countries, (see bdgofori@nus.edu.sg)
2 Ibid;
3 Ibid;
4 World Economic Forum,(2016) Shaping the Future of Construction. A Breakthrough in Mindset and Technology (Prepared in collaboration with The Boston Consulting Group);
8 Ibid;
10 Ibid
11 https://www.geneve.int.ch/International.associationtunnelsandunderg roundspace-ita.aites..
seconds to whisk passengers from the basement parking lot to the top.

Sagrada familia, a construction on a land mark which was designed by architect Antoni Gaudi who devoted for more than 40 years (started in 1882) can be best mentioned. It is visited each year by 2.5 million people and registered by UNESCO as a world heritage. Burj Alarab (Dubai), built during five years, where 2000 workers participated to create the engineering marvel, which ascends almost 600 feet high, (completed in 1999) the St Basil’s Cathedral, the Chrysler buildings etc can be mentioned among other remarkable buildings of the world. Such amusing architectural designs are inspired by the contemporary engineers, to have just like them at their home or be the architect of them somewhere in the world.

Such, unique features with wonderful architectural design can come to the scene today only by highly experienced engineering professionals; who are extremely scarce in the developing nations. Such job can be performed today by the international construction, involving multinational citizens.

The above discussed five scenarios are not exhaustive to illustrate the need of international construction. There are other several reasons for construction firms to expand their business into international markets. These reasons include stagnant domestic markets, spreading risk through diversification into new markets, competitive use of resources, and taking advantage of the opportunities offered by the global economy. Technological advances, political reforms, worldwide trends toward privatization and an increasing recognition of economic interdependence, that represent the primary forces of globalization are also other reasons for the need of the international construction.

Part III. Trends of International Construction
Development of international construction is measured in terms of mobilizing revenues.

The construction market in the developing market economies of the world around 1967 was about 25 billion dollars, about 6 billion dollars of which was executed by multi-national construction firms. This denotes sizable overseas contracts executed by construction firms of the various industrialized nations, including work undertaken in both developed and developing countries. Overseas construction contracts of firms such as in USA, UK, France and Italy amounted to above 6.6 billion dollars in 1969.

Reviewing developments in the construction industry in several Asian countries in the 1990s, Raftery et al (1998) identified three trends:

(a) A greater extent of private-sector participation in major infrastructure projects:

(b) Increasing vertical integration in the packaging of construction projects which are growing larger; and

(C) Increased foreign participation in the construction industries of most of the countries, almost all of which are developing.

They attributed these trends to “the globalization and deregulation of markets necessitated by fiscal, technological and managerial constraints”.

In 2000 the share of construction to the global economy was $3 trillion 600 billion. It was split between civil engineering (28%), residential (36%) and non-residential (36%). This implies that the sector represents over 10% of the global economy.

The total volume of the global construction market has grown rapidly in the past several decades due to globalization and growth of the world’s economy. International contractors have been taking advantage of the booming global construction industry, and the associated investment in infrastructure and industrial projects. The rapid growth of global construction is by witnessed Engineering News Record’s (ENR) annual statistics (ENR, 2004-16). The total revenue of the top 250/225 Global Contractors (TGC250) outside of their domestic market has increased by nearly 180% during the past decade. Top international construction firms have had a compound annual growth rate (CAGR) of 9.72% between 2004 and 2015. In 2014, the TGC250 had total combined revenue of $1430.8 billion and only one third was obtained from projects outside of their domestic markets.

Traditionally, large engineering and construction (E&C) projects that require more technical expertise and diverse technological and managerial competencies are often delivered by large international contractors. The ENR statistics for the past 13 years (2004-2016) indicate that civil and infrastructure is the largest construction segment of the TGC 250 contractors. Combined with petroleum and manufacturing, these market segments represent 78% of the international work of the TGCs.

The global construction market increased to US$10.4 trillion in 2017 and is expected to rise by 3.7% per year and reach US$12.4 trillion by 2022. The construction market is large and has undergone significant transformation over the course of history.

The Global Construction 2030 prediction report, recently published by London-based researchers, predicts that the global construction market will grow faster than world GDP over the next decade. This report predicts that the global Construction market will grow 85% by 2030. Many of the countries across
the globe will have a need for large, complex E&C projects (e.g. infrastructure & industrial plants) which will motivate global contractors to expand their international operations. According to the Global construction Repo 2030, the global construction is expected to reach 12.9 trillion in 2022 and 15.5 trillion by 2030 with three countries China, USA, and India leading the way and accounting for 57% of all global growth. This show that the uninterrupted development of the role of international construction in adding to the world economy.

Part V: Contribution of International Construction to the Development of Economy

The contribution of construction industry to the development of the economy of individual country as well as to the global economy is unquestionable. The development of the economy of countries as well as global economy go hand in hand. Since 2020 global economy and global construction output showed a tremendous development without interruption. For example, the World Economic outlook (IMF, 2000) suggests that the value of trade across the global economy was $32110 bn. in 1999. As an estimate in 1999 (Batchelor, suggests that the value of trade across the global economy was $3600 bn., where the share of civil engineering is 28%, residential is 36% and non-residential is 36%. It is implied that the sector represents over 10% of the global economy. Broadly speaking the construction sector represents about 5% to 15% of national economy in value and generally 8% to 10% is to be the usual norm. If we see analysis by Bon and Crosthwaite (2000) construction sector represents about 4% to 58%, although with an average of 11%. In each country’s aggregated economic development, a construction output has a great share. For example, in 1993, a figure for GDP in UK stood at approximately, €550 billion ($825 billion). The construction sector estimated at between €50 billion and F.55 billion ($75 – 83 billion).

At the same time in the same year combined construction markets of South East Asian region was the UK’s construction sector contribution to the development of economy. The distinctive feature of construction industry from other sector is expressed in that it has backward and forward linkages with other sectors of economy. This thesis is confirmed by others writers. Ofori (1990) expresses the opinion that the importance of the construction in the national economy is in linkages with the rest of the economy.

World Bank (1984) earlier stated also that the importance of the construction industry stems from its strong linkages with other sectors of the economy. The fact that the construction industry has a close connections with other sectors of economy and the contribution of the construction sector to the GDP of the country cannot be separately evaluated without having in mind that the industry has linkages with others sectors. Andrew Foulkes had conducted a research on this issue based on the Pearce Report (2003), which states that defining the contribution of the construction can only be understandable through having in mind its “narrow” and “broad” understanding. According to the “narrow” construction sector consists of all actory that directly correlate with the construction activities, such as site preparation, construction of buildings, briefing design, control work, facility management, project management, etc. The broader definition consists of much more, including the supply chain for construction related products including the mining of construction materials, and the manufacture of the construction products.

The writers assert that one component that is included in the narrow definition, an enviable depends on the components included in the broader definition. For example, if the mining does not occur or ended or if the management following a building does not occur, then the on site construction management does not occur either. According to the writer, the narrow view yields an economic impact of around 5% of GDP and encompasses approximately 170 000 firms, whereas the broader view is roughly twice this amount contributing 10% of GDP and including 350 000 firms.

It is clearly understandable that construction or international construction’s contribution to the economy of the nation cannot be evaluated only taking the output obtained from the first definition, but aggregate approach is better to be adopted. This is simple and prima face that when long term different construction projects launched in the country, other supply chains, such as wood manufacturing, steel manufacturing, cement factories, also start to boom. At the same time site guards, financial specialists, accountants, lawyers, cleaners, etc will be necessitated for the construction industries for both first defined and 2nd defined construction sectors.

Thus, the revenue domain of the top 10 or top 250 international construction companies is to be seen in aggregated approach valuation rather than solely sticking at the first view (narrow)

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2 (https://www.bizvibe.com/blog/ agrees construction companies – worldwide.)
3 See Mawhinney M. (2001), International Construction (pp. 6 – 12; 4 Ibid;
5 Ibid;
6 For example, Park (1989) assessed that the construction industry generated one of the highest multiplier effects through its extensive backward and forward linkages with other economics sectors (see Oladinrin T.O., Ogunsemi D.R. Futy Journal of Environment, Vol. 7, No1, July, 2012, (Role of Construction Sector in Economic Growth: Empirical Evidence from Nigeria);
7 For example, Park (1989) assessed that the construction industry generated one of the highest multiplier effects through its extensive backward and forward linkages with other economics sectors (see Oladinrin T.O., Ogunsemi D.R. Futy Journal of Environment, Vol. 7, No1, July, 2012, (Role of Construction Sector in Economic Growth: Empirical Evidence from Nigeria);
8 The writer included into the broader definition also professional services such as management rather than construction management, architecture, design and facilities management;
9 See Research Report (2003);
10 Thus, it is difficult to demark the boundary between the both above reflected views “the narrow” and “the broader” without a serious and overall evaluation of the contribution of both definitions in aggregated approach for the development of the economy of the nations;
definition of construction. For example, according to the ENR report of JGC 250 in 2015, the regional share of the TGC 250 looks like the following: Asia accounts 24.1% of the international construction market (with $21 billion annual revenue), Europe the 2nd largest market accounts $93 billion or 18.6%, Middle East accounts $77 billion. Africa accounts $65 billion, the Caribbean and Latin America account together $55 billion, and USA alone accounts $53 billion and Canada accounts $23 billion. Thus, in each region is share of construction output, there is a contribution of local contractors and other subsidiaries to the main construction deals such as construction project management, construction consulting, etc.

Part VI: International Construction as Complex Business Transaction.
Construction is viewed as a business and services. International construction business is viewed as more complicated business than ordinary multinational or the international business, such as franchising, importing diverse items of goods, etc. International business is a business that takes place in the host country rather than in home country. Such business is taking place with people having different attitudes, beliefs, cultures, social and historical values, etc. Moreover, such business involves interaction of people or organizations subjected to absolutely different laws, rules and regulations. These all together make international business, including international construction complicated.

International construction business is termed as more complicated since it involves a project which implementation is bound by time, required highly qualified personnel, allocation of huge budget, involving defect liability period. Let us see the case study that clearly manifests the complexity of international construction dedicated to the construction of Hong Kong’s International Airport construction project that can be termed as “international of international”. In 1998 Hong Kong launched its new airport project, requiring 1248 hectare reclamation and airport platform, 34 km road and railway link to the central business district. 35000 construction workers over the globe participated in the projects, where the total cost of the project was US $20 bn. This made the project to be ranked as one of the largest infrastructure developments, of the world. The workers were busy continuously 24 hours a day during 20 months. Surprisingly, the original estimate project cost was reduced by approximately 6% in the final out put cost. The design of road utility infrastructure required to be sufficient for a working population 25000 living in surrounding. This huge international construction airport project designed to accommodate 35 million passengers per annum.

The complexity of this project is expressed in that 35000 work forces coming from different countries came together to perform the work, 225 construction contracts (international construction contracts) were agreed and signed. Since each contract stands independently, and has its own purpose, the combined performance of such contracts is complicated task. Companies from the following countries over the world shared the work, which can be soon in terms of the value of the contract as well. Accordingly, Hong Kong (the host country) 23%, China 8%, Japan 26%, Britain 16%, Holland 6%, France 5%, Belgium 3%, New Zealand 3%, Australia 2%, USA 2%, Spain 2%, Germany 2%; yet smaller splits were shared by companies coming from countries like Italy, South Africa, Austria, Norway, Portugal, Sweden and Denmark.

This classic international construction project clearly manifests the possible conflicts of cultures, believes, attitudes, most importantly the need of conflicts of laws, tensions, worries of contractors, sub-contractors, consultants, project managers, client (the owner of the project). Among the complex international construction projects of the beginning of the 21 c. the Grand Ethiopian Renaissance Dam can be best mentioned.

Construction of the Grand Ethiopian Renaissance Dam (GERD) stated in April 2011 after the ETB 80 bn. (US $ 4.7 bn), engineering, procurement and construction (EPC) contract was awarded to Salini constructor. The GERD is expected to produce 6000 megawatt of energy which will be the center of Ethiopia’s bid to become Africa’s biggest power exporter. The project which was expected to be finalized in 2017, needed extra four years to be completed due to the poor performance in the electro-mechanical and hydraulic steel structure. The dam’s construction is estimated to create up to 12,000 jobs, and caused the resettlement of 20,000 people. Some literatures yet confirm that in 2017, there were 9000 domestic workers and 400 foreigners. There were other sub-contractors working in

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1 It is to be clearly underlined that the large global construction market does not necessarily mean that all of the construction activities are performed by international contractors. Only 20% of the total volume of the global construction is considered to be a potential market for international contractors (see S.H. Ham, D.Y. Kim, S.H. Jang and Choi, Growth in the global strategies, for potential market for international contractors (see S.H. Ham, D.Y. Kim, S.H. Jang and Choi, Growth in the global strategies, for

2 International business is a business that takes place in the host country rather than in home country. Such business is taking place with people having different attitudes, beliefs, cultures, social and historical values, etc. Moreover, such business involves interaction of people or organizations subjected to absolutely different laws, rules and regulations. These all together make international business, including international construction complicated.

3 A construction business is not the job which can be performed at once, but a job that involves subsequent life cycles starting from the commencement of the construction up to the expiration of the defect liability period;
the GERD project and in addition to the Salini\textsuperscript{1}. For example, the supply for low and high voltage cables for the dam was provided by another Italian firm Tratos VaciSPA in 2012 by the Salini contruttori\textsuperscript{2}. GE – Alstom, a US-French joint venture was also previously awarded US$61 million to install and commission the six turbine units, where two of them were expected to be finalized before 2020 to help early generation of 750 MW\textsuperscript{3}. This largest African hydro electric power dam is termed as international classic project, where cultural, social, attitudinal, legal etc. diversity have been manifested and complexity of the project also is expressed in that it involves different skilled man powers from different countries, different stake holders in financing the project and different system of laws that may pave away for the need of conflict of laws etc.

Part VII. Challenges of International Construction

Construction (both domestic and international) cannot be viewed as an easy business. Construction takes extraordinary level of skills to coordinate different teams to plan, design, and finance and bring a large scale projects to completion\textsuperscript{4}. Coordinating and executing logistic is difficult when done locally, regionally or nationally, but the issue becomes more difficult when done internationally.

Generally, the challenges international companies may encounter with, can be identified as follow:

(1) **Social issues in construction activities**

Social issue today is one of the component elements of the sustainable development which is premised in system theory, which is stipulated that the triple bottom line (TBL), v.z, the social, the economic and the environmental dimensions are interrelated, where each dimension needs to function properly to ensure the maintenance of the large system\textsuperscript{5}.

As Harris and Goodwin stated, the term “social” has broadest sense and socially sustainable system must achieve fairness in distribution and opportunity, adequate provisions of social services, including health and education, gender equity, and political accountability and participation\textsuperscript{6}. Other writer, McKenzie, defined social sustainability as a positive condition that includes equity, culture, political participation, psychological needs and process within communities that can achieve that condition\textsuperscript{7}.

Litting and Gressleer characterized social sustainability as being about satisfying the extended set of human needs, preserving nature and fulfilling social justice, as well as human dignity and political participation\textsuperscript{8}.

Social environment is an environment in which people coexist, live and work together. In international construction a trans boundary activities bring together different people with different social attitudes\textsuperscript{9}.

If one conduct is viewed as happiness in one society, the same is regarded as the symbol of sad, sorrow\textsuperscript{10}. Since, international construction is an activity where different citizens with different social backgrounds come together to complete the same project, for the achievement of the same objective, social clash is an inevitable.

Thus, it would be better for international construction companies to know ahead, the component elements of social phenomena they may encounter with in the host countries.

(2) **Cultural issues**

Cultural environment is another issue that each international actor encounters within the host country. Culture deals with a group’s design for living. The successful marketer is advised to be a student of culture. Dutch management professor Geert Hofstede refers to culture as the “software of mind”, and argues that it provides a guideline for human on how to think and behave\textsuperscript{11}. Anthropologist and business consultant Edward Hall express the opinion that cultural differences are often invisible and if marketer, ignores them, it often hurt both companies and careers\textsuperscript{12}. James Day Hodgson, former US ambassador to Japan describes culture as “thicket”. According to the ambassador, tickets are tough to get through, but effort and patience often lead to success\textsuperscript{13}. Thus, international construction companies managers, consultants and others foreign experts are better to know the culture of the host country before embarking into the business.

(3) **Political issues**

It is obvious that international construction companies have been plagued with political risks in the global market, there where unstable government, which is incompetent to create a secure environment for international investors as well as international construction companies; construction business will by risky dealing\textsuperscript{14}. A political instability hurts both the international business companies and the host countries themselves. Companies properties can be confiscated, nationalized, or expropriated or domesticated by the host country\textsuperscript{15}. The host country on other hand loses a huge amount of investment, that could enable it develop its economy, due to its political conditions. Some countries like African countries are not politically stable with

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\textsuperscript{1} See www.eepco.gov.et;

\textsuperscript{2} Ibid;

\textsuperscript{3} See https://constructionreviewonline.com/2019/;

\textsuperscript{4} Dillard and King (2008), Understanding social Dimension of sustainability. Rutledge, New York,


\textsuperscript{6} Ibid, p. 35- 46;

\textsuperscript{7} Ibid, p. 35- 46;
seemingly unending civil wars, boundary disputes, and oppressive military regimes. For example, Central Africa, where ethnic wars have embroiled, is one of the most politically unstable in the world. The issue is more critical in Africa, which is trapped in a vicious circle. World Bank study showed that the 47 nations of Sub Saharan Africa were attracting less than $2 billion annually indirect foreign investment – which is about $10 billion what a developing nation such as Mexico attracts.

The worst thing is, when indigenous politically disappointed rebels simply kill innocent foreign international contractors. For example in 2015, three executives of the China Railway Construction Corporation were killed in Mali by terrorist attack and 29 Chinese were kidnaped by Sudanese rebels.

Thus, political instability in the host country is serious threat for the international construction companies.

(4) Legal Environment
Legal environment is the environment that may adversely affect the international business in general and international construction business in particular. Whether the host country is governed by the rule of law is determinant for the international companies. It is desirable if the host country functions on the base of rule of law, instead of rule of political dictatorship or rule by powerful political elite. Following the rule of law is not only ensuring the protection of human rights of local people but also it ensures such protection for foreigners. If rule of law is less likely to be applicable in practice, then it is impossible to attract foreign investors.

In China, for example, Hong Kong has an advantage over during shanghai in attracting foreign investor, because Hong Kong has a tradition of law adopted from British colonial days, while Shanghai courts tend to favour Chinese litigants. It is absolutely impossible for a foreign party to win a case against a Chinese party in Chinese court. This disparity in legal systems between the two cities is seen to give Hong Kong an advantage as a location for foreign firms.

Any international construction company is advised to have general understanding of the law of the host country. Accordingly, international company representative is has to know prevailed world legal systems, namely, common law, code or civil law, Islamic law and residuary of Marxist–socialist law elements.

Even if deep understanding of law of different countries is not an easy task, experts of the international construction companies are better to have a general or at least some knowledge of laws having a close intimacy with their contractual duties and rights. Non-Muslim foreign contractors are also better know unique aspects of Islamic law. Its unique aspect is that it prohibits that payment of interest, business dealing with alcohol, gambling and casinos. Generally it prohibits investment in those activities that violate the rule of Quaran.

Specially, prohibition against the payment of interest affects banking and business practices severely. In addition annulment or amendment of the existing laws, adoption of new law, etc...can affect any the over going international negotiations or international construction in operations.

(5) Technological issues

The term “technology” is a combination of Greek “techno”, (art, craft) with “logos” (word, speech), which meant in Greece a discourse on the arts, (both fine and applied). The meaning and component elements started in England in the 17th century and have been continuing since then to bear broad meanings. Further technology was started to be defined as the means or activity by which man seeks to change or manipulate his environment.

In the contemporary world American, European and Chinese construction companies have a competitive advantage in the international construction market, because they incorporate well-known building methods and have expertise in advanced technologies.

It is this reason that makes large American and European contractors to have efficient organizational and Managerial Skills to deliver large, complex international engineering and construction (E&C) Projects. Thus, construction firms located in developed countries with high expertise in complex infrastructure projects such as high ways, dams, urban infrastructure, power, industrial and petroleum are often able to win large contracts overseas. Among the modern remarkable buildings of the world influenced by the modern technological achievement, the Malaysian post modernist towers with 88 floors and 1,483 foot high with eitt just 90 second to take the passengers from the basement to the top can be best mentioned. Thus, developed countries like US, Europe, Japan and China will continue to be attracted by the developing counties where technology is not so far developed. For example, the United States, European and Japanese construction companies combined market share in the 2001 was 71% in the Middle East, 70% in Asian countries, 79% in Africa and 89% in Latin America. All needed due to their advanced technologies.

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1. Ibid
2. Ibid
3. See Phillip Cateora, John Graham Cited above, at 8, pp. 156 – 158;
4. See Tengyuan Chang et al, noted at 1 above.
7. The basis of common law is tradition, past practice, and precedents, set by courts through interpretations of statutes and past rulings. (prevailed, in England US, Canada and other countries once under English influence.)
8. Is derived from Roman law and found in Germany, France and in non-Marxist countries.
9. Is derived from the interpretation of Koran and found in Pakistan, Iran, Saudi Arabia and other muslim.
10. Is derived from the Marxist socialist ideology, which legal system is centered on the economic, political and social policies of the states. It is found in Russia, and republics of former soviet union, Eastern Europe, China and other Marxist-socialist states.
11. See supra – note at 7, P16
12. See supra – note at 7, P 16
13. See https://www.britanica.com/technology/history of technology/
14. In the 17th century, in English it was used to mean a discussion of the applied arts only but by the early 20th Century, the terms started to embrace process and ideas in addition, tools and machines.
15. See supra note at on this page
16. See Ahmed Farid Amir, Dennis C. Bausman supra note at 2, P 10
17. Ibid
18. See supra-note at 2, page 7 of this paper
(6) Languages
Language can be viewed as a principal method of human communication, consisting of words used in structured and conventional way and conveyed by speech, writing or gestures. Language probably, the most apparent culture distinction that the newcomer to international business perceives in the means of communication. Language is also said to be the key to culture and without it people will find themselves locked out at all. Spoken language demarcates; v.z., if two languages are spoken in a country, there will be two separate cultures Example, as in case of Belgium; where four languages are spoken, there will be four cultures, or as in case of Switzerland. But this is not always true for instance, Spanish is the principal language of 21 Latin American nations, but no one should believe that, they are culturally similar. When many spoken languages exist in a single country (India and many African nations), one language usually serves as the principal tool of communication across culture. Thus it would be difficult for the foreigners who do business in such host countries to know all language. In some countries, language such as English is spoken as a common language. For example, 40% of Europe speak English as a second language. Thus, it will be easier for the foreign contractor, who works across Europe to learn English instead of learning languages of more than 20 nations. Let us see the trouble, one German engineer encountered, while working in Colombia. A German engineer, in Colombia who worked on pipeline, arrived at a hotel in the interior, where he tried to explain to the desk clerk that he had a suitcase full of cash that he wanted the hotel to keep. Because he knew no Spanish, he was having difficulty making himself understood. During the conversation, the desk clerk opened the suitcase in front of everyone in the lobby. A week later, the engineer was kidnapped by a guerrilla and held for a month. Other funny that may happen due to the language barriers is that a Chilean told one of the authors of her surprise at seeing a kidnaped by a guerrilla and held for a month. A week later, the engineer was kidnapped by a guerrilla and held for a month.
In Chile, she said, *epico* is a reference to the male sex organ.
In practice, knowing local language where it is first native language is advantageous than knowing the second language in the host country, or example English is spoken in Ethiopia. If Chinese or English businessman knows Amharic or Oromigna in Oromo Regional State, the business dealing will be smoother. It is advised that at least executives of the construction companies know the language of the host country or language of their workers.

(7) Bribery in the host country
What bribe is and what constitutes bribe is relevant issues that requires appropriate response. Bribe is giving very expensive gifts and money to well placed government officials in return for special favors, large orders, and protections. Such gifts or payments termed differently in different countries, for example, mordida (“bite”) – in Latin America, “dash” (West Africa, where it might also mean “tip”), Pot de vin (“jug of wine” - France), La bustralla “envelope left on Italian bureaucrat’s desk”, and “grease” (US). In literature, such payment can be classified into three: (1) Bribe itself; (2) Extortion; and (3) Tip. If payments are made to induce the payee to do that is illegal something for the payer, that is bribe; where as if payment is made to keep the payee from harming the payer in some way, it is extortion. But if payment (tip) is made after the service is rendered, that is tip. All types of payment prevailed, in the construction business, where payments are made necessarily to get poorly paid government officials to do their normal duties to huge sums to win the bid or large orders.
Bribe is another name of corruption. Different world wide institutions have been trying to make the world free of corruption. For example, Transparency Institute (TI) has a mission to create change toward a world free of corruption. Accordingly, its Corruption Perception Index (CPI), draws on survey of business people and political analysis. The CPI is designed so that countries perceived to be the least corrupt are given the highest score, 10. Accordingly, in 2003 Corruption Perception Index Scores ranking table shows, that Finland, Iceland, Denmark, New Zealand, Singapore and Sweden obtained the highest score 10. Other 8 countries, such as Netherlands, Norway, Australia, Switzerland, United Kingdom, Luxembourg, Canada and Austria took the second place obtaining 9 Bangladesh became the least country scoring “0” and Nigeria took second place scoring only “1”. Bribe or corruption is termed as one of the challenges for the modern construction industry, in particular in the developing countries, in that skilled international construction companies from developed nations, such as Europe and US are not keen to work in the developing countries, where bribe and corruption become norms.
Corruption and bribe are now more clearly viewed as a criminal activity, and construction companies all over the world are forced to avoid such practices as some are caught up in legal investigations.

(8) Foreign competitors as a challenge in the host country.
International contractors (foreign competitors) in the host countries are expected to be potential threats for new entrants into the construction market. International contractors face a complex situation in which success only partially depends on price competition and other factors which differentiate a contractor’s product from that of competitor’s become more

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1 See Donald A. Ball et al (2010), International Business P. 152.
2 See Donald A. Ball et al (2010), International Business P. 152.
3 See supra note at 2, P. 153.
4 See supra note at 2,
P. 153.
5 Ibid;
6 Ibid;
7 For example, if somebody pays the head waiter in the hotel to get good table or if late comer tips the coordinator to step into first;
8 For example, you tip somebody, because without it, you will be put by the head of hotel waiter near the kitchen or your service will be prolonged;
9 If you tip somebody after you obtained services, in the hotel in a good table, or after somebody relieved you from suffering;
10 See supra note at 9, in page 19 of this paper;
11 See supra note at 9, in page 19 of this paper;
12 See Suat Gunhan and David Ardit (2005), Factors Affecting International Construction, Journal of Construction Engineering and Management;
13 See MacWinney, 2001;

http://ijesc.org/
crucial. To avoid such challenges, some international construction firms forced to choose the strategy that they think is helpful. For example, Korean firms chose a cost leadership strategy and made sustainable in roads into the Middle East market through aggressive cost cutting on labor intensive infrastructure projects. Chinese construction enterprises with their enormous resources of skilled man power provide also a strategy based on cost focus. The following facts can clearly show how far international contractors are sharing construction market, through competition. For example, while the United States based companies had 16% of the Middle East, 15% of the Asian, 27% of the African and 38% of the Latin American market undertaking by 225 top international companies listed by ENR, at the same time, European construction companies had 50% in Middle East, 29% in Asia, 47% in Africa and 48% in Latin America. Moreover, emerging international contractors in the developing countries are potential threats for the international contractors from European, US or Asian countries.

(9) Loss of Key employment
Specialists’ expertise and skilled and trained international contractors are the driving force to make the construction firms unique and demandable through having specialist technologies that enable to be competitive and acceptable by the receiving countries. Expertise that is required in the international construction projects is project manager, who is both businessman and technician. It is believed that American contractors win international construction projects abroad not only because of their experience with advanced technologies, but also because of their organizational and managerial skills. Losing experienced and talented manpower is one of the most important threats in the international construction. Since Construction Company performs two types of managerial tasks, v.z. tasks with technological content, such as project planning, management, selection of construction method, estimating, budgeting and control, all which require solid engineering background; and tasks with business content which include financial management, marketing, accounting background, procurement of products and services and having these both skills in combination is not easy. Expertises of such type are very few in the international market. If the companies lose once such skilled individuals, it would be difficult to replace them easily. For example, this may happen, when a company previously in the top 20 contractors in the world, in the next year becomes one of the top 10 contractors in the world. In this case, since the demand of the contractor worldwide increases, it requires additional skilled man power, who can be recruited from the other contractors, yet in the top 20, for the greater payment. Thus, this can be viewed as one of the challenges for the international construction companies.

(10) Shortage of client’s financial resources
In the environment of the increase of urban population, the need of the infrastructure, especially in the developing nations, is increasing. There is no shortage of international construction needed, but the crucial issue is lack of capital or lack of ability of the client to balance financial resources against construction needs. That is why financial resources have become very important in international contracting.

To develop their infrastructure, developing countries are to opt rather, to obtain loan from international financial institutions, like World Bank or International Bank of Reconstruction and Development (IBRD) or United States Agency for International Development (US AID), etc. Since loans or aids cannot be easily obtained by the project owners, especially developing countries, either due to fear of financial institutions to have got back the money with huge interest or due to the lack of interest of such financial institutions for the ideology the receiving countries adhere to. This makes the construction project owners incapable to develop their infrastructures.

(11) Inflation
Inflation is one of the pressing challenges of International Construction business, especially those who are licensed as the supplier of construction equipments.

Inflation is a trend of rising prices. It may be caused by demand exceeding supply or an increase in money supply. All economists however agree that in an inflated economy, prices increase. Some developed countries, such as Japan, the EU and US have relatively good records in keeping inflation down in recent years. Whereas, many countries, such as Latin American countries among which Bolivia can be best mentioned with its troublesome inflation from 1970s – 1990s. Bolivia’s inflation rate reached 11,118. The overall highest inflation rate was recorded in Zimbabwe in 2010, with 66,000 percent. Politicians have won election with promises to

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3. Ibid;
4. See Suat Gunhan and David Ardit, cited at supranote -5 page_ of this paper
5. See Suat Gunham and David Ardit, p. 4;
6. To be competent and skilled worker in the construction project, one must at the same time have business management capacity and engineer technician capability.
7. According to ENR, international contractors, 2002. US based companies undertook $1,468.5 million worth of construction management for fee work and $2,857.5 million worth of construction management at risk in international market due to skilled man power in technology and project management capacity, the companies had;
8. See note 1 above, p. 4;
10. Since its creation in 1944, IBRD for example, has provided $500 billion in loans mostly in the 3rd world countries to rebuild infrastructure, strengthen economy, alleviate poverty, construct dams, power stations, highways, built by international construction firms;
11. World Bank Financed the Construction of Morrison – Knudsen and Raymond 2000 miles of high way in Colombia
12. Afghanistan alone received total foreign aid of $7.3 billion in 2014 with $1.3 billion contributed by US AID, out of which $289 million was spent on infrastructure development projects (see Ahmad Farid Amiri, Dennis C. Bausman, the Internationalization of construction industry – a Global Perspective);
combat inflation hawks. Even it is sometimes termed as public enemy No1 in the US (by President Gerald Ford in 1974).

Inflation is also financial force, external to companies, that affects the firms in several major ways. Inflation not only hammers the financial position of the lender, since for example if the lender can obtain an interest 25% but unexpectedly the rate of inflation becomes 30%, but also international construction equipment suppliers, where due to the inflation the prices of the equipments are substantially escalated.

The driving force of inflation is the declining of local currency, causing the increase of the costs of imported materials, plant and equipments. It may also increase the costs of loan repayments and interests incurred by local operations from foreign debts.

Assume, that XY, Chinese international construction company concluded a construction contract with Addis Ababa City Administration, where the first obliged itself to construct remarkable cultural center in the center of city which is worth $1 billion. The contractor has signed agreement with another Chinese construction equipment supplier. Due to the substantial increase of the cost of the equipments, the supplier could not deliver it to the contractor on time. This caused delay of the construction, where the contractor is forced to pay damages.

Since forecasting inflation is difficult, any international contractor is better to expect it, and have awareness of it, through collecting financial information in the host countries.

Part VIII: Mitigating Mechanism of the Challenges of International Construction

The writer has tried to expose pressing challenges for the international construction companies prevailed in the construction market. Such challenges are not only hindering International construction companies to compete successfully and complete international construction projects, but also become obstacles for the host country to have got expected economic development in construction sector. Of the numerous possible mitigating mechanisms that may enable both the host countries and international construction enterprises to have benefited from the Transboundary construction industry, the following five can be outlined:

1. **Promoting public-private partnership**

For the spanning years, it was unbelievable for the government to jointly work with large private organizations to implement governmental mega projects, construct governmental universities high schools, clinics, roads, etc.

Nowadays, the participation of the private sector in building infrastructure projects has become one of the important trends in the construction industries in many countries.

According to the United Nations, private sector participation in infrastructure projects in developing countries alone amounted to about $164 billion in 2014, which was almost estimated to be equivalent to overseas development assistance.

The driving reasons that necessitated the participation of private sector in public infrastructure projects are: limited domestic budgets and resources, increasing national debt, lack of advanced technical and managerial skills necessary for highly complex infrastructure projects.

In the absence of such financial constraints and lack of skilled man power, the need of infrastructure developments continues without interruption. For example, according to the report published by the American Society of Engineers in 2013, for the next 20 years, the global demand for both new and upgraded infrastructure for electricity transmission and distribution, transformation, telecommunication, and water supply is likely to average 3.5% of the world GDP and approximately $50 trillion per annum until 2030.

The report stated that the U.S. alone will need to invest $3.6 trillion to repair and upgrade its decaying infrastructure by 2020.

That was why public private partnership (PPP), scheme has become relevant nowadays.

Many well known construction companies have already been experienced to work in public – private partnership scheme. Financial strength superior technical and managerial skills, positive track records technological advantages, and strong international network are considered attributes that give international companies a competitive advantage to deliver large PPP projects in the today’s global business. The PPP scheme is not only meant the assistance of reputable private companies to the public enterprises to implement mega-projects, but it manifests the collaboration of public institutions with private sectors, for capacitating them. Among the private enterprises that deliver, large PPP projects, Skanska, (head quartered in Sweden), regarded as one of the largest infrastructure development and construction groups with PPP projects from Europe to North America can be best mentioned.

Among the remarkable international constructions completed by Skanska, the Royal London Hospitals, La Guardia Airport in New York, and Elizabeth River Tunnel in

2. Suat Guhan and David Aridit, factors Affecting International Construction, P. 278.
3. Ibid
4. Look at 16 - 23 page of the paper, the 11 selected Challenges for the modern International Construction Companies.

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5. See Ahmad Farid Amiri, Dennis C. Bausman, p. 64
8. Ibid;
9. Ibid;
10. For example, the Royal Institution of chartered surveyors (RICS) has been providing educational and professional services to construction firms worldwide for the last 140 years (see Runde, Daniel; Carson, Anna saito: coats and eleanor) (Runde et al (2011), seizing the opportunity in public private) USAID and Mcc.
11. A report of the CSIS project on US leadership in development center for strategic and international studies, 2011;
Virginia can be be mentioned as some of the largest PPP projects\(^1\). Thus, public-private partnership (PPP), as a collaboration of public and private institutions for the development of infrastructure will be chosen as the mitigating mechanism of risks associated with the international construction.

(2) **Enhancing implementation of Rule of Law**
In legal literature the terms like “law”, “rule”, and “rule of law” are frequently used, among others. There are various definitions of law, rule and rule of law in literatures. But, for the purpose of this paper, the writer is limited only to the more authoritative documents that give precise definitions. In the Black Law Dictionary, “law” is defined as the regime that orders human activities and relations through systematic application of the force of politically organized society\(^2\). In the Concise Law Dictionary, “rule” is defined as a definite regulation prescribed as a law of conduct. Rule is regulation, which prescribes or lays down a general standard or guide to conduct which breach causes sanction\(^3\). In Oxford Advanced Learner’s Dictionary the word “rule” is termed as statement of what can, should or must be done in certain circumstances\(^4\).

As regard to the rule of law, lawyers and non-lawyers spend a lot of time discussing what the rule of law is. The definition of rule of law given by the UN is quite a mouthful. The term “rule of law” refers to a principle of governance in which all persons, institutions and entities, public and private, including the state itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires, as well, measures to ensure adherence to the principles of supremacy of law, equality before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness and procedural and legal transparency\(^5\).

As it is obviously manifested from the definitions given above, when law and rule regard regulations of the behavior or conduct of people, in the politically organized society, rule of law amplifies the principle of governance to which all subjects of law (individuals, entire people, organizations, leaders etc…) adhere to. International construction companies’ rights cannot be protected in the host country, where supremacy of law is impractical. The existence of rule of law builds trust and attracts foreign investors.

(3) **Assuring Quality of Education**
A man is a reasonable being, born with moral that enables him distinguish the right behavior from the wrong, the good from the bad. However, education shapes and enhances the man’s thinking ability, to utilize his mind for the development. Nothing can be mentioned as a, miracle to be said, about the driving forces leading world nations to the development, than education, invention and innovation, which become their customs and traditions. Educated people not only are able to use their potentials in the right time and in the right place, but also they can well know as how properly use minds of foreigners for their national development. Developing countries, like African can never advance themselves, being depended on the exported technologies, know-how and skilled man powers, without producing native skilled and qualified professionals. The key for all these is “education”, which comprises research and development, invention and innovation, Construction industry, which is complex in its nature and international construction which is more complex business, require up to date and advanced technologies, and involvement of engineer professionals, economists, financial specialists, accountants, educated planners and project managers as well as educated political leaders.

People in developing nations are suffering from scarcity of qualified professionals, advanced knowledge of architectural designers, undeveloped infrastructures, etc. For alleviating, all these problems, nothing is demanded as a “key” rather than quality education. This thesis is justified; by the International laureate, Nelson Mandela, whose quotes\(^6\) about education remain advising and educative signals for all nations of the world, especial there where education and quality of education have not got due respect.

“Destroying any nation does not require the use of atomic bombs or the use of long range missiles. It only requires lowering the quality of education and allowing cheating in the examinations by the students.

- Patients die at the hands of such doctors;
- Buildings collapse at the hands of such engineers;
- Money is lost at the hands of such economists and accountants;
- Humanity dies at the hands of such religious scholars;
- Justice is lost at the hands of the judges;
- The collapse of education is the collapse of a nation.”

(4) **Enhancing Sense of patriotism**
The word “Patriotism” comes from the Latin word “patria” meaning “a country”, and patriotism implies a love of country and readiness to sacrifice when ever need arises for the safeguarding of the motherland\(^7\). Less patriots, never go to vote their leaders, less patriots do not care about the fate of their country, less patriots are opportunities; (work, live, go there, where it is convenient for them). If sense of patriotism is lowered, and majority of people of one country, become less patriotic, the country will suffer from the collapse and ultimately will be collapsed. Bribers are less patriots, laziness is the manifestation of less patriotism, political bargain is manifestation of less patriotism, cheating at exams is less patriotism, ignoring leadership is less patriotism, marginalization from the politics, laws and rule of law is also manifestation of less patriotism.

The worst manifestation of less patriotism is when a citizen or a group of citizens laundering national money for his personal use in the research conducted on the theme “The Absence of

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\(^4\) *(https://www.open society foundation .org/);


\(^6\) (see https://www.shabdkosh.com/dictionary/english/timil)
Rule of Law in the Ethiopian Construction Industry”, of 88 respondents, 39.8% and 30.7% confirmed that less feeling of patriotism in the country in general and in construction industry in particular causes the absence of Rule of Law in the sector1. If majority of population in the country has not enhanced sense of patriotism, the country never prospers. In this case leaders will cheat their country in collaboration with foreign citizens suited for this purpose, teachers, engineers, and other key professionals do not care about the fate of their countries.

(5) Enhancement of political leaders commitment
The word “Politics” derived from Greek word “Politika” meaning “affairs of the cities,” which refer to the set of activities that are associated with making decisions in groups, or other forms of power relations between individuals, such as the distribution of resources or status3. Today, politics is studied in academy and politicians are advised to be educated in political science. The more number of skilled and educated citizens increases in the country, the more the country needs highly qualified political leaders. In some African countries, bribery and corruption is at peak and rule of law is disrespected not only by the ordinary citizens, but also by the political leaders themselves. Specially, in the construction sector, where huge money is allocated for the infrastructure development, for mega construction projects where national and monies obtained through loan flow, the sector is highly corrupted. For example, in the research conducted in the theme “Absence of Rule of Law in Ethiopian Construction Industry”, of 88 respondents, more than 80% of respondents showed their disappointment to the Ethiopian political leaders, believing that there is no political commitment from the side of Ethiopian political leaders. Accordingly, 48.9% and 33% of the respondents rated ‘very high’ and ‘high’ the less commitment of political leaders to facilitate conditions for the proper implementation of rule of law in the Ethiopian Construction Industry.

Empirical Review
Empirical reviews have been conducted on selected studies worldwide relating to construction and international construction issues. Some of them will be reviewed as follow: Tengyuan Chang et al. (2018), in their research Article titled “Political Risk Paths in International Construction Projects: Case Study from Chinese Construction Enterprises”, nicely illustrated about the role of Chinese contractors in international construction business and serious political risks the Chinese construction enterprises encountered within overseas. According to the writers, after China joined World Trade Organization (WTO), many well-known Chinese construction enterprises (CCES), began to carryout construction works in overseas projects. Accordingly, the revenues of Chinese contractors tremendously increased from year to year. With the proposition of Silk Road Economic Belt Strategy, it is believed that more and more CCES will step abroad to expand their market worldwide. However, irrespective of these tremendous opportunities, the writers revealed and as well as witnessed the dramatic increase of political risks for CCES, around the world, particularly in developing countries. According to the writers, even if some studies conducted on the causes of political risk in international business, they fail yet to directly or indirectly connect the causes with their consequences.

For example, Jakobsen, maintained that obsolescing bargain mechanism, socio political and grievances, political institutions, and preferences and attitudes are the main risk factors in international business. On the other hand, Tsai and Su established political risk assessment model for port project and political risk factors into five categories: Foreign enterprise policy, Political and social systems, Macroeconomic practices, Project development policy, and Project management policy. Other authors, such as Deng and Low made detailed investigation about political risk factors in international construction, but yet failed to connect them with consequences as other writers did. Deng et al. stated that political risk in international project bursts when external threats and internal vulnerability overlap and concluded that the internal vulnerability of the project systems are determined by the characteristics of project and firms.

In contrast to the above writers, who identified their political risk factors, but did not connect them clearly with their possible consequences, Tengyuan Chang et al identified 29 political risks factors and three political risk consequences. To verify comprehensiveness of the identified risk factors and consequences, a pilot survey was performed with a few experts to collect their opinions on the preliminary list of the risk factors and consequences. Those participated in the pilot survey were prominent experts in the international construction business.

2 In the Ancient Greece cities were viewed as states or poles, having limited boundary with limited population.
3 See https://dictionary.cambridge.org/dictionaryEnglish/politics
4 Suat Gunhan and David Aridit, factors Affecting International Construction, P. 278.
5 According to the data of Engineering News Record(ENR), the revenues of Chinese Contractors, increased from $8.8 billion in 2004 to $98.7 billion in 2016, with the first ranking in the world and 65 Chinese contractors were included in the ENR’s top 250.
6 Ibid
7 The writers witnessed that in 2015, three executives of the China Railway Construction Corporation were killed in the Mali terrorist attack. In 2014, the Mexican government annulled, business deal with a Chinese worth $20 billion led consortium over its first high-speed railway project due to public concerns about the bidding process. In 2012 in the armed conflict between Sudanese rebels and the local government, 29 Sino hydro Staff members in high way project were kidnapped by Sudanese rebels.
8 Deng and Low identified the political risks in international construction projects and categorized 85 political risk factors into five levels: international environment, host country, industry specific, project specific, and firm specific.
9 X. Deng, S. P. Low and Z. Zhao, Project System Vulnerability to Political Risk in International Construction Projects: the Case of Chinese Contractors, Projects Management Journal, VOL. 45, No 2, pp. 20 – 33, 2014;
10 Five Chinese professors who focused on international project management and political risk management and five senior managers who came from four CCES namely, China Communication Construction Group Limited, Power Construction Corporation of China, China State Construction Engineering Corporation and China Railway Group Limited, All of these experts had more than 20 years of work experience;
Based on the pilots survey, the 29 political risk factors and 3 political risk consequences were divided into nine groups, v.z., G1, sociopolitical stability, G2 legal and regulatory, G3 social safety, G4 economic performance, G5 attitude toward foreigners, G6, International interactive relations, G7 Law exposure, G8 Capability of enterprises, and G9, Risk consequences. To verify whether the above proposed political risk factors (paths) are significant in international construction project, a structured questionnaire was developed to collect the political risk cases from CCES performing international construction projects. Accordingly, from December, 2015 to March, 2016 a total of 1000 questionnaires were disseminated to the selected practitioners and 264 valid responses were received representing a response rate of 26.4%. 67.4% of the respondents were from CCES, that were selected from the 2015 Top 250 international contractors according to ENR’s report and 32.6% respondents were from others CCES. The remaining were from senior managers, project managers or project engineers.

68 respondents had over 20 years of work experience and the rest had more than 5 years work experience. Among the 264 respondents, 113 (42.8%) were from Asia, 101 (38.8%) from Africa, the rest were from Europe, North America and South America.

The findings obtained showed that the poor performance of sociopolitical stability has both direct and indirect negative influence on international construction projects. International Construction Enterprises (ICES) operating in countries with the unsound legal and regulatory may suffer from the risks related to improper construction procedures, illegal bid activities, and illegal interferences of politicians, breach of contracts and frequent change of the law. The research revealed also that political risks aroused from social safety around the world, such as armed conflicts in Yemen, Honduras, Syria, Afghanistan, Libya, Mali, Iraq, and India, South Sudan, Pakistan and Somalia.

The study recommended that:
- ICES can preferentially access to the countries that have good relations with their home countries to seek more recognition and less opposition;
- Enhance competitive capacities that include rich experience, high localization, and stable relationship with host governments and power groups;
- Integrate adaptive capacities, include high involvement of local business interest, adaptive organizational culture, significant economic contribution to the local economy;
- Buying risk insurance, adopting perfect contract, employing capable local partners, implementing a localization strategy, making contingency plans, sending staff to training programs, are what recommended in the study.

Suat Gunhan and David Arditi (2005) in their article “Factors Affecting International Construction” made a detailed discussion on the threats and opportunities of international construction. The objective of the study was to evaluate relative importance of company strength associated with international expansion and the threats and opportunities inherent in international market. With a purpose to achieve the objective, 54 US based international construction companies with minimum $10 million in revenue ranked in the top 252 international contractors listed by engineering News-record (ENR) in 2000 were invited to participate in survey. 17 companies accepted the invitations and were sent e-mail in questionnaire. And 12 out of 17 returned the questionnaire constituting the rate of 22% of original population of 54 companies.

The findings of the study indicate that the track record, specialists’ expertise, project management capability, are the most important company strength. Whereas, loss of key personnel, shortage of financial resources, inflation and currency fluctuation are the most important treats related to international market. On the other hand, the increase of long term profitability, the ability to maintain stakeholders’ returns, and the globalization and openness of the markets are the most important opportunities available in the international works.

Ahmad Farid, Dennis C. Bausman (2018) in their Article “Internationalization of Construction Industry – A Global Perspective” clearly illustrated the role of international construction in mobilizing revenue globally. Analyzed the regional market share and assessed the trends of global construction industry. After analyzing the place of international construction during consecutive 13 years (from 2004 – 2016) and being supported by the Engineering News Record (ENR), they showed the rapid growth of global construction. Accordingly, the total revenue of the top 250/225 Global Contractors (JGC 250) outside of their domestic market has increased by nearly 180% with compound annual growth 9.7% between 2004 and 2015.

The study revealed also the regional market share of the TGC 250, in 2015, which all can be illustrated in the table below.

### Regional Market Share TGC 250 in 2015 Calculated According to the Data from ENR

<table>
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<tr>
<th>Regional Market</th>
<th>$b</th>
<th>% Top 250</th>
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3 According to ENR list of the top 225 international constructors, there were 64 United States based construction companies, in the list in 1998, 74 in 1999, 73 in 2000 and 79 in 2001. However, only 34 US international contractors appeared in the list after then for the four consecutive year. We noted earlier, that the Chinese international contractors have become the world wide leading enterprises from 2004 – 2016 in their revenue and 65 Chinese contractors were included in ENR’s top 250;

4 Considering the fact that company executives were asked to respond to an eight pages questionnaire composed of cumbersome pairwise comparisons, the response rate of 22% is acceptable;


6 The writers confirm, however that large global construction market does not mean all of the construction activities performed by international contractors. Accordingly, they showed that only 20% of the total volume of global construction is considered to be potential market for the international contractors, v.z. the remaining 80% of global construction is to be done by the local constructors who are using traditional materials and methods;

For example, in 2014 the TGC 250 had total combined revenue of $1430 billion, where only one third was obtained from projects outside of their domestic market (see ref.5);
As it is showed in the Table, Asia remains the largest global construction market accounting 24.1% and followed by Europe which accounts 18.6%; Middle East 15.3%, Africa 12.9%, Latin America 10.9%, United States 10.7% and Arctic/Antarctic 2.8%.

As regards to the trends of international construction, the writers indicated that the global construction industry is to expand. The writers evidence this fact citing at the Global Construction 2030 Report, recently published by London based researchers, which predict that global construction market will grow 85% by 2030, since many of the countries across the globe will have a need for large complex engineering construction (EC) projects.

**Part IX: Conclusion and Recommendation**

**Conclusions**

Based on the reviewed books, journals, articles, internet sources and empirical literatures, the study comes to the following conclusions:

International construction, irrespective of its complexity in comparison with the local construction continues to develop tremendously since 1960s, and its future prediction and trends show its uninterrupted future development. Being complicated in nature, international construction involves diverse challenges, where foreign contractors suffer in the host countries due to political instability, social, cultural, language diversity (barriers). Irrespective of this challenges, the need of international construction continues for the two basic reasons; 1. Due to the need of infrastructure developments, construction of wind powers, dams, and mega projects in the developing nations; and 2. Due to the extreme need of the highly skilled man power and up to date technology from the developed nations, which are all in the developing nations are at infant stage yet.

In future the booming of construction industry is to shift from developed nations, US, Europe, Japan and others to developing nations or least developed nations, since all what was built and constructed in the developed nations are yet in process in the developing nations.

**Recommendation**

Based, on the conclusions arrived, the researcher has opted to recommend the followings:

- The recipient countries have to scale up the capacity of local contractors through offering good education in engineering fields, projects, financial, human resources, laws relating to the construction business, as well as construction professional ethics.
- Developing countries better to promote public private partnership scheme for the construction of infrastructures to cover some projects which are not yet handed over to the foreign constructors.
- Developing nations are advised to make themselves and their construction companies adhere to rule of law, local rules and regulations, etc.
- International construction companies on the other hand are required to train their key employees in the language, culture, social and beliefs, laws, prevailed in the recipient countries to well perform construction works in the host countries.
- International construction companies are to be keened to transfer technology to the local industry.
- They better to involve local contractors, subcontractors, ordinary employees, and develop sense of socialization and respect to the local customs.
- They better train key local employees in the field they have undertaken an obligation to perform works.
- They better enter into contract of insurance against possible risks that may happen in the course of performing their construction works and during their presence in the host country.
- International construction companies are advised to study unique features of the host countries through research and development activities capacitating itself to predict the possible events (political, legal) changes in future time to come.
- International construction company better to make itself sure that construction activities it carries out and its presence in the host countries is blessed; its contribution to GDP of the host countries and its transfer of the technology to the local contracts are tangible and remarkable as well.

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