

LITERATURE STUDY ON SOCIO-ECONOMIC FACTORS OF CONSTRUCTION INDUSTRY IN DEVELOPING COUNTRIES

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Abstract- This literature study concerns all the foremost factors of construction industry known as socio-economic factors. Construction industry in developing countries drastically influenced by such factors. The socio-economic factors are 1.Socio-economic stress, 2.Resource shortage, 3.Institutional weakness, 4.General inability, 5.Plan, Design & Construction, 6.Construction industry development, 7.Globalisation, 8.Culture and 9.Environment. Aim of This paper is to share a various literature study on such socio-economic factors. Also briefs how the construction industry in developing countries influenced by all the above socio-economic factors. It has been studied through the various literatures.

Keywords-*Economic development, Construction industry development, Developing nation*

I INTRODUCTION

There is a famous French saying: “If construction moves everything moves”. Construction is a major industry throughout the world accounting for a sizeable proportion of most countries’ Gross Domestic Product (GDP) and Gross National Product (GNP). The importance of the construction sector is not only related to its size but also to its role as a catalyst in economic growth of the developing country. Unfortunately construction sector is one of the most neglected and unorganized sector, in developing countries, heavily taxed as construction is still treated as a part of luxury. No financial facilities are available from the banks for the construction of infrastructure projects and no positive policy ever made from the Banks of countries as well. However, financing was made available for housing sector but on a very high rate of interest. The construction sector which has no significant default is still considered as the most risky business sector by the banks. In addition followings are the some of the most important factors that

has to be consider by construction industries in developing countries.

II LITERATURES

1. Socio-economic stress (Fred Moavenzadeh and Janet Ann Koch Rossow) According to their study it is always said that, the construction industry plays a major role in any developed or developing country. There are such Stress induced for the development of the construction industry in developing country. Such kinds of stress are

- i. Economic development of developing country
- ii. Physical, Social & Economic needs
- iii. Local economical condition

i. Economic development of developing country (Dr.Pa.Kaja Mohideen) Today Indian sub continent is the second fastest-growing economy in the world. The Indian construction industry has been playing a vital role in overall economic development of the country. The construction sector is also the second largest employer in the country following agriculture, employing 18 million people directly and 14 million indirectly. Employment growth of this sector has reached 70% between 2004 and 2009. About 250 ancillary industries such as cement, steel, brick. Timber and building material are dependent on the construction industry. A unit increase in expenditure in this sector has a multiplier effect and capacity to generate income as high as five times. It accounts for about 11.1% of India’s GDP. Finally he concluded that the sector also holds importance from an employment point of view. As per the approach paper for the twelfth five-year plan, the sector is expected to employ nearly 92 million people by 2022.

ii. Physical, Social and Economic needs (Fred Moavenzadeh and Janet Ann Koch Rossow)The authors also studied about physical needs of the construction

industry in developing countries. As per the study Industry Size, Nature of its Operation, Development of Activity And Development of Technology are the basic physical needs. As a conclusion they recommends to consider the such factors for their development. And according to (Arghadeep Laskar and C.V.R.Murty) The social needs of construction industry in developing countries are such Infrastructure, Housing, Disaster Resistant Construction, Water Management And Mass Transportation. They concludes these are the major challenges in construction industry however the industry has to overcome such challenges as in its path of advancement. Recent experiences of several new mega projects are clear indicators that the industry is poised for a bright future. (Dr.Pa.Kaja Mohideen) Also states that Sustainable Development of the construction industry of India is an important indicator of the economic development as it creates Foreign Direct Investment (FDI). FDI in construction development activities slowed by almost CAGR OF 5% between 2009-13 reaching Rs.72.5billion. During the eleventh five-year plan (2007-2012), the construction sector grew at an average of 7.7 %, particularly outpacing the overall GDP Growth during 2007-08 and 2010-11. The twelfth five-year plan expects the total market size of the construction sector to reach Rs.52.3 trillion by the end 2017. The construction sector contributed about 6% to the overall Gross Fixed Capital Formation (GFCF) in 2011-2015. (Arghadeep Laskar and C.V.R.Murty) Also concludes present annual expenditure budget of india is against the backdrop of the total Gross National Product (GNP) of the country. And this sector of economic activity generally creates 4.7 times Increases Income Generation. Every Rs.1 investment in the construction industry causes an Rs.0.80 increment in GDP. As a result the sector also increases 7.76 times in Employment Generation potentiality. The obvious destination of the construction sector in the country, with over 3.1 crore persons employed in it.

iii. Local economical condition (Kirtee Shah) India, a country is a federation of 28 states with their own administration and legislatures and 7 union Territories governed by the union government. The world's second largest country with population of over 1.25 billion (2013). Percentage of population of working age 66.29% (2012). GDP Per Capita is \$4,247billion (2009). Total GDP is \$4,969 billion (2009). Estimated GDP growth 5.6% (2014). Unemployment rate of the country is 3.6% (2013). World Competitiveness 2014 year book ranking is 44th. World Talent Ranking 2014 is 48th. FDI into India is \$25.53 billion (april -14 to jan-15). Construction is a vehicle for the growth of civilization. It builds structures that sustain a nation's economy. Value of the construction industry in India is 126billion (2013). It is a 3rd highest in spending Total cost of 427billion(2013) for construction industry and as a 2nd highest the growth of spending cost increases by 7%. Average of 11% GDP growth was based on (2000-2013). 35million people are employed in construction industry and it is the 2nd highest inflow of FDI in india. Construction equipment market is projected to grow to \$7-8 billion by

2016 and \$16-21 billion by 2020. Infrastructure output has grown at an average of 5.34 % per month in the last decades.

2. Resource Shortage (Sri Nuwan Randunupura and Chandanie Hadiwattege) Construction is the ultimate objective of a design, and the transformation of a design by

construction into a useful structure which is accomplished through proper management of

- i. Men
- ii. Material
- iii. Money
- iv. Machinery

The Project Managers must insure that these inputs are effectively co ordinate to achieve an efficient construction process.

i. Men (Dale I. Belman) have expressed his concern that the industry is facing an imminent shortage of skilled workers. These concerns reflect the industry's long experience with wide fluctuations in construction activity and the demand for construction workers. Even if construction labour markets are not currently tight, stakeholders can be concerned with whether in the near future, one to two years, increased demand for construction will cause the need for construction workers to rapidly outstrip the availability of qualified employees. Similar concerns are expressed by the Associate Director of the Associated Builders and Contractors in which indicates that, given the prospective 32% growth in demand for construction workers from 5.6 in 2013 to 7.4 million in 2020. Employment in construction remains almost 2.2 million workers lower than its peak in the middle of the last decade; unemployment remains around 10% of the labour force even at the height of the construction season; there are 10 construction workers for every job opening in the industry while the economy wide ratio is 2 workers per opening.

ii. Material (A.A.Gulghane, and Prof P.V.Khandve) In recent trends a wide range of building materials is available for the construction of civil engineering structures. The total cost of materials may be up to 60% or more of the total cost incurred in construction project dependent upon the type of project. Effective construction materials management is a key to success for a construction project. Construction waste is another serious problem in construction industry. The authors presents a review on systematically investigation of the material management techniques and control of construction waste. As a result they concludes poor handling of construction materials affects the overall performance of construction projects in terms of cost, time, quality and productivity. Pre planning and material procurement are equally important in controlling the total project cost. It reveals that the minimization of materials wastage during the construction phases is important in order to avoid loss of profits.

iii. Money (Abdussalam Shibani and Kumar Arumugam) The aim of their study is to identify the major reasons for cost overruns in construction projects in india as

well as the critical success factors that are helping to avoid the cost over runs. The effective critical success factors include appropriate planning in the initial stages, skills of contractors and architects, good relationship and regular coordination among client and contractor and early contribution of contractor with the project. The ideal methods that helps to reduce cost overruns include efficient planning, proper management of site and supervision of the project, suitable planning and arrangement of project, proper methods for construction, regular meetings on development of the project and hiring proficient subcontractors and suppliers. From the findings and analysis, it can be concluded that certain critical factors are also affects the objective of construction projects, like budget, performance and quality and completion of project on time. This is the reason of this examination attempted to distinguish the discriminating achievement components to evade the expense invades in the development ventures in India.

iv. Machinery (Prajesh. V.P and N.Sakthivel)

Construction machinery or equipment is a major resource in the building process for a construction project. The increased size and cost of equipment and the existence of economic factors such as inflation, obsolescence and interest rates have complicated decision analysis of equipment problems. This complicated environment calls for proper management of this asset to optimize the rate of investment and eventually improves profits. Some contractors have developed a uniform equipment policy from which established rules and procedures are drawn for prudent management of their equipment. As they concludes, only one third of the construction industries were found to have documented policies, it was found that there is a uniform practice of management among industries. The main goal of any management policy is to enable optimization of resources and maximization of profits. The management practices of the construction industries of India suggest that they achieve the goals of good management, and they follow the best practice suited to their conditions.

3. Institutional weakness (Bonga Ntuli and Dr. Dhiren Allopi)

Civil engineers contractors encounters serious challenges in order to sustain their business, especially in a weak economic climate. A certain level of construction experience, expertise and training are required to manage a sustainable construction company. The Construction Industry Development Board (CIDB) was established in 2000 as a statutory body to provide leadership to stakeholder and stimulate sustainable growth, reform and improvement of the construction sector for effective infrastructure delivery and improvement of construction skills. The major challenges education or institutional failed to teach us, are Business cash flow, Corruption in the industry, Policies for contractors, Lack of CIDB'S role understanding and Partnership approach. Their conclusion appears that current education strategies are not designed to accommodate such people. New strategies need to be applied and different learning styles to be properly managed by educators and researchers with tangible knowledge of the deficiencies and

the needs of the industry. Industry stakeholders need to develop well researched development programs in conjunction with academia. The attitude towards each other needs to change to achieve a common goal, the design of contractor development programs which relate to the needs of the construction industry if construction programs are to survive in tertiary institutions.

4. General Inability (Ofori Ametepey, Clinton Aigbavboa and Kwame Ansah)

Sustainable construction efforts in some countries have been unsuccessful due to numerous barriers to its successful implementation. This study identifies and priorities likely barriers to successful implementation of sustainable construction and measures to overcome potential barriers. The factors identified as barriers are grouped under six components as Financial barriers, Political barriers, Management/ Leadership barriers, Technical barriers, Social-cultural barriers and Knowledge/ Awareness barriers. From 31 factors identified by the construction practitioners as potential barriers to the implementation of sustainable construction factor analysis enabled 27 of them to be placed under the above six components. To ensure the successful implementation of sustainable construction, Government with the support of stakeholders in the construction industry should come up with special legislations, codes or standards relating to sustainable construction practices, Disussions, seminars, training and workshops on sustainable construction and its importance should initiated by stakeholders in the industry, there is the need for government to introduce some fiscal incentives. Government agencies on their part should embark on applicable policies that could provide critical support to make sustainable construction feasible.

5. Plan, Design and Construction (Dr.Pa.Kaja Mohideen)

Construction is a feat of human multitasking. Normally the job is managed by a project manager and supervised by a construction project manager, design engineer, construction engineer or project architect. For the successful execution of a project effective factors involved are

- i. Plan
- ii. Design
- iii. Construction

i. Plan (Ali Jaafari) Published criticism in recent years concerning the inadequacy of Project Planning. The analysis reveals that, despite numerous criticism project and construction planning should be done using CPM scheduling. Main factors affecting successful planning are realistic estimation of the productivity of crews in the context of expected job-management efficiency conditions and inclusion of sufficient time buffers between dissimilar trades. CPM is found to be equally useful as a planning tool for linear or repetitive projects. **(Dr.Javier Irizarry and Dr. Rosli Mohamad Zin)** Their aim is to develop a prototype of a Sustainable Construction Planning System (SCPS) in order to mittiagte the negative impacts of the construction industry on the environment. The SCPS automatically provides the essential information which is required to perform sustainable construction for achieving

superior quality in both performance and economic terms of a project. (**Robby Soetanto, Chris I.Goodier, Simon A. Austin, Andrew R.J.Dainty and Andrew D.F. Price**) Strategic Planning is a key management function which provides future direction and helps determine the competitiveness of companies. Strategic Planning is a critical management functions which could ensure the long-term survival of construction organizations and it will shape company characteristics and determine the market in which it is going to operate.

ii. Design (Rebecca Mirsky and Anthony D.Songer) This concept is evolving toward a regenerative design approach that promotes a triple top line, moving accountability to the beginning of the design process by assigning value to variety of factors.

There is an increasingly important need for proactive participation from the construction community in this new generation of sustainability efforts. Otherwise there will be a widening gap between design and construction. This paper examines the triple top line in the context of construction projects and identifies opportunities for construction professionals. Schematic Design is an initial design scheme that seeks to define the general scope and conceptual design of the project. At the end of schematic design phase the consultant will present some very rough sketches to the owner for approval. Design Development a stage subsequent to schematic design, decisions are worked out in greater detail. A clear and coordinated description of all aspects of the building. At the end of the design development defines the site plan, floor plan and exterior elevations. Construction Documents that set forth the detailed requirements for the construction of a building project. They consist of Drawings and specification, drawings are the illustrative component of construction documents, whereas Specification are written requirements pertaining to building materials, equipments and construction systems.

iii. Construction(Dr.Richard J. Sebastian and Bill Davison) The primary purpose of this research was to examine the perceived consequences of the major contract administration problems in construction examined were contract delays, contract costs and contract termination. They were more likely than no consequences for all contract except leases and the types of contract. As a result procurement professionals to identify the likely contract administration problem and their casual risk for a specific contract type. That helps to identify the methods to control risk by avoiding, shifting, minimizing or accepting risk. (**Unmesh.Y.Polekar and Rohit.R.Salgude**) Proper scheduling is very important in construction projects for reducing and controlling delays if the project. Scheduling is determination the timing of events in the project. Scheduling can also defined as the detailed plan of the project work tasks with respect to time. Activities on the site with respect to execution of the residential project are thoroughly observed and comparison is made between scheduled and actual executed schedule. (**Jaakko Kujala, Tim Brady and Jaakko Putila**) Complex Products and Systems (CoPS) to address the challenges of managing costs. Identification of

several challenges in performing various cost management functions related to cost estimation, cost control and monitoring, revenue recognition, profitability analysis and margin calculations. The cost management functions are impacted by large size, complexity, uncertainty and uniqueness of those projects. (**Gregory A.Howell**) The origin of lean production are reviewed and a claim made that it is a new form of production management, that is neither mass nor craft. Then the applicability of lean production in construction is considered and nature of lean construction discussed in comparison with current practice. Clear set of objective for the delivery process, aimed at maximizing performance for the customer at the project level, concurrent design of product and process, and the application of production control throughout the life of the product from design to delivery.

6. Construction Industry Development (George Ofori)

The subjects studied in the research programme have included the nature of the construction industry, its importance in development. Elements of the process of construction industry development are focusing on contractors and technology development. Finally the concepts of leadership, ethics and transparency and their importance on construction projects and in the construction industry were also studied. The focus is on the development of national construction industries to enable them to meet the huge demands to improve the capacity and effectiveness of the construction industry to meet the Infrastructure Facilities, National Economic and social Development, Money Value to Industry, Domestic Competitiveness, Role of Participants and Stakeholders, Technological and Human Resource Development. (**P.R. Swarup**) Construction Industry Development Council (CIDC) is the apex body of construction industry of india. The paper describes in brief the political, Social and Legal framework. The paper details the economic overview, administrative and regulatory features, enhancement and development of Indian construction industry. The Indian economic environment and system and procedure would further boost the construction industry development.

7. Globalisation (Afaf Abbasi and David Baidry) The world has been recently exposed to phenomenal global changes in different fields including Economy, Technology and Communications. The term 'Globalisation' has been used in connection with these changes and their consequences. The aim of this paper is to understand the term 'globalisation' and to study its implication for the world economy in general and the construction industry in developing countries. The literature recommended that business organizations, particularly construction industry of developing countries should continuously consider and evaluate the opportunities and threats provided by globalization. (**George R Najjir, Philip C love and Goran Runeson**) There are many issues in regard to the impact of globalization on the construction industry. Some are general for example the polarization if the global economy, the new rules and regulations controlled by organisations such as World Trade Organisation (WTO), unrestricted international capital flows and influence of shareholders on the direction

of the organization. Others are specific to the construction industry such as influence of globalization on construction industry development are stock exchanges and non listed construction related process. This paper examines some of these construction specific issues in context of the limited knowledge of their specific implications on the globalization of that industry.

8. Culture (Syed Nihlas, Kristen C. Barlish, Jacob Kashiwagi and Dean T. Kashiwagi) This paper analyzes the potential impact of the Indian culture on the poor performance. The authors propose to identify the unique cultural issues, identify using the Construction Industry Structure (CIS) model the impact of the cultural issues on the construction industry and identification of a potential solution to the problems. The paper proposes to test the solution in actual tests with industry participants. What makes this research unique is the approach of using deductive logic to create a simple solution, and then convincing a major research client to test the proposal. Indian construction industry totally different from other foreign construction industries and to propose a solution to overcome the culture and improve the industry efficiency and performance. Caste hierarchy, societal control, Management practice, Direction and control and corruption of such Indian culture may have an adverse impact on the construction industry in India. **(Serkan Kivrak, Andrew Ross and Gokhan Arslan)** Understanding and successfully managing cultural differences can provide several advantages for project as well as company success. On the other hand problem arising from cultural differences can cause waste of resources and delay of construction. The specific objectives of this study are to find out the opinions of managers about the possible effects of cultural diversity on some management practices in the construction business, the relationship between the management of cultural diversity and success. The highlighted practices that can be significantly influenced by cultural difference were human resource management, knowledge management, communication management, safety management, time management and negotiation.

9. Environment (Adnan Enshassi, Bernd Kochendoerfer and Ehsan Rizq) Construction sector is considered as one of the main sources of environmental pollution in the world. It has massive direct and indirect effects on the environment. The aim of this paper to assess the environmental impacts due to construction projects activities and propose some suggestion in curbing down these adverse impacts. The environmental impacts are categorized into three safeguard subjects: ecosystem, natural resources and public impacts. The results of this study revealed that dust generation, noise pollution, operations with vegetation removal, and air pollution are the most significant environmental impacts of construction projects. The results also revealed that labours and those who are working in construction sector are the most slices of people exposing every day to health problems such as respiratory problems, liver cancer, hearing impairment, hypertension, annoyance, sleep disturbance and other cardiovascular adverse effects. In addition the public impacts was found as the most important category that affect the environment. It is recommended to enhance the knowledge and awareness

of construction participants with regard to environment impacts of construction and enforcing institutions to conduct environmental impact assessment (EIA) in the early stage of the projects. The results of this study can help decision makers to identify major construction impacts on environmental and make environmental friendly construction plans in the stages of construction.

III CONCLUSION

Study on socio-economic factors of construction industry in developing countries concludes that, the socio-economic factors such as 1.Socio-economic stress, 2.Resource shortage, 3.Institutional weakness, 4.General inability, 5.Plan, Design & Construction, 6.Construction industry development, 7.Globalisation, 8.Culture and 9.Environment. The general characteristics of various socio-economic factors and also the influences of such socio-economic factors on construction industries in developing countries has been studied through various authors and their literatures. These are the major factors that helps the construction industry development in developing countries. Every construction organization in the developing country has to be responsible to consider such factors for the efficient and successful practices of construction industry in developing countries.

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