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Conceptual Framework of the Sustainable Factors towards Construction Industry Projects Sustainability in United Arab Emirates

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Abstract

The construction industry has been chastised for allegedly having a negative influence on the environment. To mitigate these effects, the sector has been implementing sustainable practices throughout its value chain. The construction sector requires advanced technologies and cutting-edge solutions. Additionally, the building construction industry is currently experiencing overinvestment issues as a result of an unreasonably long delay in completing the project; these Sustainable elements have a negative impact on the overall quality of the building construction project. The purpose of this study is to examine the sustainable factors towards construction industry projects sustainability in United Arab Emirates. These variables should be considered when designing a framework for Influential Sustainable Factors in the UAE. The framework may assist project managers in making decisions by emphasizing the critical nature of Sustainable Factors. However, due to the increased number of construction companies and the fact that many construction projects do not fulfil their anticipated completion dates. This research is critical for stakeholders in the sustainable building construction industry in general, and for stakeholders in the United Arab Emirates in particular, particularly project management businesses. These findings serve as a foundation for future research.

Keywords: Sustainable Factors, Construction Industry, United Arab Emirates.

1. Introduction

The United Arab Emirates (UAE) continues to be a leader in the Gulf region and the Arab world, and was recently ranked as one of the world's most developed economies in the Middle East, North Africa, and Gulf region (World Bank, 2020). The rise of the UAE's building construction business is largely due to the incorporation of project management principles within the industry. Project management is primarily concerned with the use of tools, techniques, abilities, and expertise to achieve project specifications and requirements (Maceika et al., 2020). Even though it's a new profession, it's already being used informally in more established organisations (Maceika et al., 2020). The construction industry in the United Arab Emirates was one of the first to implement a project management strategy for environmentally friendly structures. Sustainable building construction in the UAE has become a model for developed nations around the world. The project management approach is a major focus of this research. It has been shown that even when project managers lack project management abilities, they continue to support sustainable building construction enterprises by offering professional advice. Because of this, it is essential for individuals to have certain project management credentials in order to strengthen the sustainable building construction business

and ensure that it contributes significantly to the UAE's economy.

In the construction sector, a firm's survival is contingent upon its capacity to acquire contracts, produce a profit, and meet the expectations of its clients. As a result, the number of contracts awarded to a company may be directly proportionate to its growth. A firm's ability to win contracts may depend on luck as well as a purposeful effort, but the firm's ability to effectively execute that contract is entirely dependent on management decisions and techniques, as outlined by Doan et al., (2017). A company's competitive edge in the construction industry becomes all the more apparent in light of this. As stated by Dyer (2017), today's construction projects are far more complicated, dynamic, and uncertain than they were even a few decades ago, and new management tactics must be implemented to meet the various challenges these projects may provide.

The ability of a company to hold onto its competitive edge over rivals over the long term is critical to sustainability in the context of competitive advantage (Bamgbade et al., 2019). Businesses that are able to maintain their competitive advantage are more likely to succeed in the long run. Continuous monitoring of the project's efficiency and mitigation of expected risks are the hallmarks of a sustainable competitive advantage system. To retain and preserve a competitive edge throughout time, a business must be capable of continuous improvement and adaptation to change. If a firm has strong management systems, proprietary technology, and greater financial capacity than its rivals, it has a competitive advantage in the construction industry; the primary issue here is that this advantage is easily imitated by other firms, and sustainability is emphasized because it allows for rapid response to environmental changes (Sutrisna et al. 2020).

Yeager (2018) highlights how developing countries are continually aiming to transition from raw material producers to manufacturing nations; this results in social and economic growth. Developing countries sometimes fail to consider the environmental effects of rapid economic development. Competitive advantage is therefore based solely on financial considerations, which is unsustainable. You won't find a competitor in this unsustainable market, which only adjusts prices based on the current knowledge provided (Maceika et al., 2020). Because of the simplicity with which they can be copied, these markets are considered to have no competitive edge. Because money and information are freely available to everyone, they cannot be called an advantage. "A long-term competitive advantage that is difficult for the opponent to copy or improve" has been characterised as a sustainable competitive advantage in this study. Renukappa et al. (2019) identify four critical reasons for implementing sustainable initiatives. Sustainability is a critical component of a company's long-term business strategy because it demonstrates the benefits of a sustainable organisation, allowing firms the opportunity to evaluate their actions' impact on the environment, and it identifies potential sustainability threats and opportunities in an industry's supply chain. As a result, it is critical to quickly identify the sustainable elements affecting construction sector projects in the United Arab Emirates. This will be accomplished through the application of a sustainable elements model to building construction projects in the UAE.

2. Literature Review

2.1 Green Economy for Sustainable Development

Vice President and Prime Minister of the UAE and Ruler of Dubai, H.H. Sheikh Mohammed bin Rashid Al Maktoum launched UAE Vision 2021 in 2010 during a Cabinet meeting. By the Union's Golden Jubilee, the UAE hopes to be one of the world's top countries. Six national priorities have been recognized as essential areas of government activity in the next years to accomplish this. The National Priorities (Key Performance Indicators) are as follows: "Green economy for sustainable development" is the tagline of a national effort to long-term construct a green economy in the UAE. With this policy, the UAE aims to become a global leader in the export and re-export of goods and green technologies, while also fostering economic growth via the upkeep of a sustainable environment. The ultimate goal of the Abu Dhabi Government's Policy Agenda is to achieve the Abu Dhabi Vision 2030. The Abu Dhabi Urban Planning Council's goals,

policies, standards, and recommendations are based on a set of overarching concepts (Emirates Green Building Council, 2021). Four pillars: environmental, economic, social and cultural are the foundations of sustainability Green Building Regulations and Specifications (GBR&S) were introduced in 2011 by the Dubai Municipality in accordance with the Dubai government's strategic goals. Until 2014, every new construction in Dubai was required to meet these standards, which began in 2011. The city of Dubai Municipality implemented the Al Safety grading system based on GBR&S in 2016 as part of its Plan 2021 goal of establishing a smart, sustainable city (Emirates Green Building Council, 2021).

2.2 Sustainable Factors

2.2.1 Economic Sustainable Factors

Economic sustainability has always been guided by growth, development, and productivity. Sustainable growth and consumption, the assumption that natural resources are infinite and the idea that economic development will 'trickle down' to the poor are all hallmarks of this system. -Market-based resource allocation (Doan et al., 2017). "Sustainable development" broadens the idea of development to include monetary, social, and human resources as well. This depletion of resources is rewarded in the name of economic expansion and consumer spending (Basiago, 2018).

2.2.2 Social Sustainable Factors

Social sustainability is defined by concepts such as equity, empowerment, access, involvement, cooperation, shared culture, and institutional stability (Alwan et al., 2017). Increasing wealth and decreasing poverty are two of its stated goals in addition to environmental preservation. According to some critics, poor countries must accept environmental deterioration as a temporary side effect of economic progress. Others have claimed that by creating an enabling environment that optimises resource allocation, such a trade-off can be avoided (Basiago, 2018).

2.2.3 Environmental Sustainable Factors

Environmental sustainability entails maintaining the integrity of ecosystems, their carrying capacity, and their biodiversity. Demands that natural capital be preserved as a form of economic inputs and a sink for wastes to be used (Zea Escamilla et al., 2019). Gathering resources must be done at a rate that is compatible with their recovery. Wastes must be emitted at a rate that does not exceed the rate at which they can be digested by the environment (Basiago, 2018).

2.2.4 Technical Critical Influential Factors

The term "economic sustainability" refers to policies that promote long-term economic success for a corporation or a nation while also protecting environmental, social, and cultural resources (Alwan et al., 2017). Economic sustainability is a goal that very few firms fulfil today, despite widespread recognition of the ways in which some corporate practices (e.g., using fossil fuels, producing food waste, and leveraging damaging manufacturing technologies) contribute to climate change (Basiago, 2018).

2.3 Construction Industry Projects Sustainability

Sustainable construction has grown significantly in popularity worldwide in recent years as a result of resource conservation, and as a result has encountered a number of managements, strategic, and operational issues and concerns. In addition, the construction sector greatly contributes to the needs of society through improving the quality of life for individuals (Doan et al., 2017; Alwan et al., 2017). But this industry is responsible for 35% of global CO2 emissions and creates 45% to 65% of waste sent to landfills. More than a third of the world's greenhouse gas emissions are attributable to construction, and almost a quarter are attributable to shipping and processing building materials (Zea Escamilla et al., 2019).

2.4. Sustainable Factors and Construction Industry Projects

Organizational theory is focuses on hierarchical social institutions and bureaucracies and their interaction with their society (Yu et al., 2019). The philosophy of organisation has developed from various backgrounds to attain manufacturing productivity and to rationalise

bureaucracy. The philosophy of organisation defines the decision-making process as one that takes several steps to make decisions. The decision-making method, described by Laker et al. (2018) as an incentive to make improvements. Organizations provide training courses used to shape the organisation's operating units. -- of these functional constructs is categorised into categories of products described. With this structure and their reliance on generating an average production, there are problems stopping businesses from making rapid improvements and coping with their demands (Hwang et al., 2017). This is why corporate decision-making systems require time and energy to offer strategies that give the enterprise additional benefit. Challenging and important organisations can involve the use of several viewpoints and expertise in order to carry out a wide range of analyses, decisions and strategies without halting operations. Modern companies concentrate on how the systems and processes regulate production, efficiency and other quantitative success metrics can be improved (Švajlenka & Kozlovská, 2018). To put it another way, stakeholders are the people who must work together in an organisation or a project in order to ensure that it is completed in a timely manner (Doan et al., 2017).

As a result of the recent growth in sustainable construction design, many countries have been establishing green building assessment systems and environmental assessment tools (Fowler & Rauch 2006). The Green Building Council of each country has created assessment tools for green buildings to support developments, but its use is not mandatory. Certified professionals carry out assessments ***(***Maceika et al., 2020***).*** Due to the widespread availability of green building grading systems, sustainable development in construction projects can be made easier (Doan et al., 2017). Building Research Establishment's Environmental Assessment Method (BREEAM) sets the benchmark for good practises in the architecture, development and maintenance of sustainable buildings and has become one of the most detailed and generally recognised environmental success indicators in a development. It promotes planners, consumers and others to learn about the low-carbon and low-impact environment, reducing building energy requirements while contemplating low-carbon technology and energy efficiency (Maceika et al., 2020).

Given the critical nature of climate change and environmental concerns in the modern era, recent study has concentrated on the ways in which sustainable construction practices might assist alleviate the effects of global warming (Hwang et al., 2017). According to data, the global potential of green building has increased in recent enterprises pursuing sustainability certification. Local governments concentrated their efforts on promoting sustainable development through legislation, concessions, and financial incentives, with the goal of making the system the new way of construction (Doan et al., 2017). This scientific discussion and debate, along with the current observational proof, contributes to the following hypothesises:

H1: There is a substantial and direct effect between economic sustainable factors and construction industry projects sustainability in UAE.

H2: There is a substantial and direct effect between social sustainable factors and construction industry projects sustainability in UAE

H3: There is a substantial and direct effect between environmentally sustainable factors and construction industry projects sustainability in UAE

H4: There is a substantial and direct effect between technical critical influential factors and construction industry projects sustainability in UAE.

3. The Conceptual Framework Proposed for the Research

The purpose of including these criteria into this research is to determine which component is most important when evaluating the performance of building sites in terms of sustainable considerations in the construction sector. In addition, the study will determine the building site feature that has the least impact on performance. Consequently, an evaluation of the project's timeliness, cost, and quality is considered sensible. According to the proposed conceptual framework for influential sustainable elements, construction sector projects in the United Arab Emirates will be better understood as a result. According to this framework's basic premise, important

sustainable aspects on construction industry projects may have an impact on project performance in terms of time, cost, and quality. If the construction company's perception is compatible with the possibility of relevant sustainable aspects effecting project performance, this may help define the performance of construction sector investment. Figure 1 shows the model or framework's path diagram, which shows the construct's components within the framework. The model depicted in Figure 1 contains the following independent variables: organizational critical influential factors; organizational challenges critical influential factors; human resource critical influential factors; technical critical influential factors; and performance of construction industry projects in the UAE. The dependent variable in the same figure is the performance of construction industry projects in the UAE. Finally, this fundamental model includes four hypotheses, which are labelled as such in Figure 1.

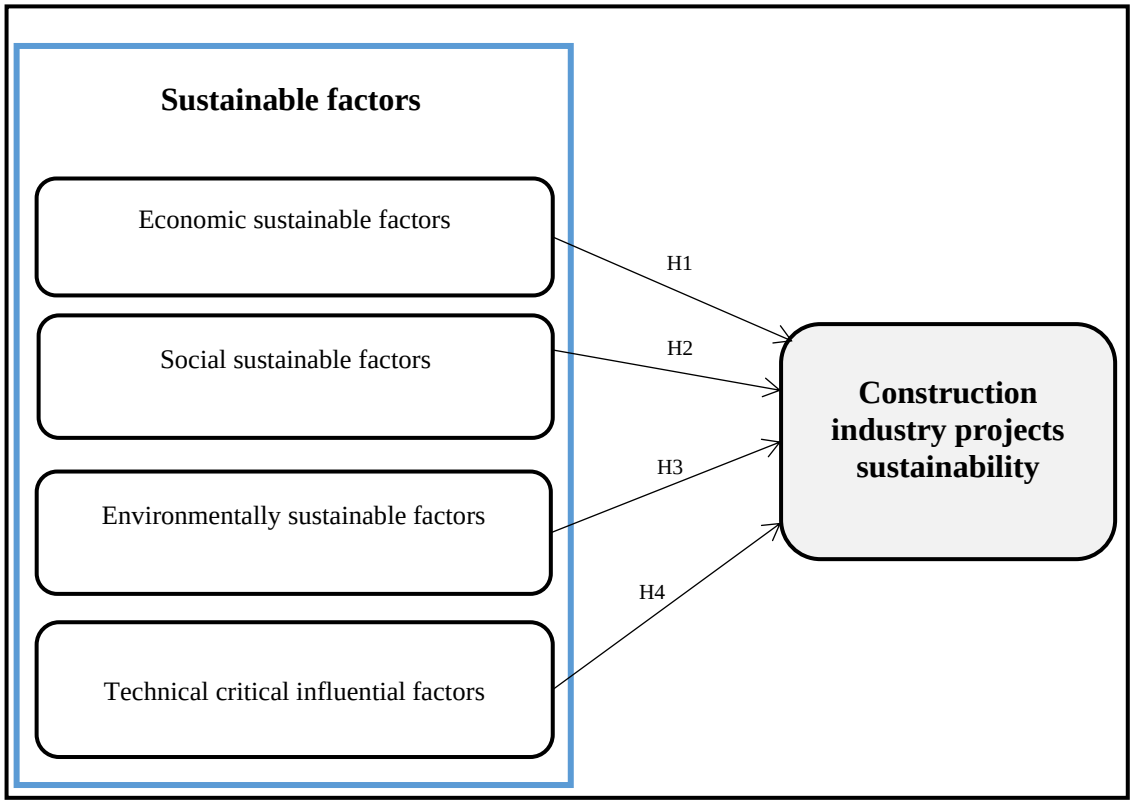

Figure 1. Research Framework

Pulling all these together (Figure 1) and bearing in mind the research objectives, a conceptual framework is developed as shown in Figure 1. To form this conceptual framework, five constructs were identified from literature related to objectives of the research.

4. Discussion

A construction project's impact on the economy, culture and society can be felt for the duration of the project's life (Yu et al., 2019). Specialized procedures and materials have been used to implement more efficient and environmentally friendly processes. (Švajlenka & Kozlovská, 2018). When a construction company grows and has a good impact on society and the economy, it has been shown that it faces a variety of problems (Lee & Mwebaza, 2020). The construction industry needs significant, sustainable growth (Švajlenka et al., 2020). Consequently, sustainability factors are required to have a clear view of the situation of project adoption (Maceika et al., 2020). Furthermore, it has been determined that essential sustainable aspects in UAE construction sector projects have been shown to be a major threat to building development. Construction projects in the UAE were shown

to have a significant impact on the project's long-term viability. Nevertheless, an in-depth examination of the impact of these crucial influencing elements on projects in the UAE was found to be outside the scope of this research for research's own sake. Therefore, it can be concluded that the critical influential sustainable factors of construction projects in UAE in construction industry projects in UAE are capable of influencing project performance, based on the relationship between the objectives of this study, structural measurement model and hypotheses. Using the CIFs Model, the study has shown that any effort to avoid critical sustainable aspects in UAE building projects is a step in the right way.

5. Conclusion and Recommendations

From the above, the purpose of the paper was to introduce a model of sustainable factors as a replacement or complement to the traditional method of project implementation control. In the course of the research, it was discovered through literature review and reports stated by the UAE construction industries. Taking into account the devastating consequences of crucial strategic factors in projects involving the construction industries that span investors, the real estate sector and government activities, it was deemed expedient to seek a better approach that was the main thrust of this research. Stakeholders in the sustainable building industry as a whole as well as project management organizations in the UAE can benefit from this study. As a result, the Abu Dhabi 2030 Plan and Project Managers & Employees will benefit from stronger plans that can be integrated into the Abu Dhabi 2030 Plan. Given the importance of sustainable building, numerous literature sources have been used to compile a list of sustainable success elements. Using the framework, project managers may be able to make a better decision by focusing more on the sustainable aspects. As this study focuses on solely the success aspects of sustainable building, it is logical to provide the success criteria as well. To put it another way, the success characteristics can be used to build excellent criteria or performance indicators for construction sector projects sustainability.

In addition to adding significantly to the existing body of knowledge, this study is also likely to have a significant impact on professional circles. First and foremost, this research results in a reduction or removal of essential sustainable variables that would increase the value of the project's success and the expectations of stakeholders. Reducing the number of failed projects would boost overall productivity, which would lead to a rise in GDP, as well as lower government spending on project budgets and more tax income. The research would also help to improve the professionalism of projects in the building industry by increasing investment in the sector. A lot of projects in the United Arab Emirates have been abandoned because of a fear of failure. The study provides a solid foundation for future research. Qualitative case studies can be used to further analyse the findings of this research. A risk assessment tool for the construction industry can be developed by analysing the identified cause elements. This can be done by determining the likelihood of each element occurring and the severity of the impact each factor has on project failure. Research into the impact of stakeholder roles on project sustainability is recommended for the future.

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