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**Effect of Sustainability Criteria on Procurement Practices Within the
Construction Supply Chain: A Case Study of El Seif Engineering
Contracting Company in Riyadh City**

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Content Page:

1. Research Title.

2. Introduction.

3. Study problem.

4. The importance of the study.

5. Objectives of the study.

6. Study questions.

7. Previous studies and theoretical framework.

8. Theoretical premises of study.

9. Methodology and research methods.

10. Study tools (data Collection tools).

11. Study Limitation.

12. List of references and preliminary sources.

Introduction

The construction industry has a significant impact on Triple Bottom Line (TBL) the environment, society, and the economy. It is a major contributor to greenhouse gas emissions, water consumption, and waste production. It is also a major source of pollution and occupational hazards. To mitigate its negative impacts, the construction industry can adopt sustainable practices.

Sustainable procurement is a key way to reduce the environmental and social impact of the construction industry. It involves selecting and purchasing goods and services that have a lower environmental and social impact than traditional goods and services. It also involves considering the sustainability performance of suppliers and products throughout the procurement process.

The construction supply chain is complex and involves a wide range of stakeholders, including contractors, subcontractors, suppliers of materials and equipment, and clients. It is important to understand how sustainability criteria are considered in procurement practices at all levels of the supply chain.

El Seif Engineering Contracting (ESEC) is one of the leading contracting companies in Saudi Arabia of high-rise towers using the latest international construction techniques and advanced systems to deliver landmark and smart tower projects. Having been established in 1975, landmark projects include the Kingdom Tower in Saudi Arabia's capital city Riyadh which stands at over 300 meters high, several towers at King Abdullah Financial District, as well as other towers and high-rise buildings in Dubai and Beirut.

El Seif offers a wide range of services which includes general contracting, projects construction management, design & build services, engineering, procurement and construction (EPC), international procurement, logistics, Public-Private Partnership (PPP), Build-Operate-Transfer (BOT) and Build-Own-Operate-Transfer (BOOT) projects as well as operation and maintenance contracts covering extensive list of project types.

<https://www.constructionweekonline.com/lists/271559-el-seif-engineering->

[contracting-company](#))

El Seif's selection for this case study is pivotal. My role as a Procurement Engineer ensures insider insights and direct access to procurement practices. The case study bridges theory and practice, showcasing how sustainability criteria are integrated into daily procurement operations.

Research problem

Despite the growing importance of sustainable procurement, there is a lack of research on the effect of sustainability criteria on procurement practices in the construction industry in Saudi Arabia. This research will address this gap by exploring the effect of sustainability criteria on procurement practices within the construction supply chain in Riyadh City, Saudi Arabia. It will focus on the case study of El Seif Engineering Contracting Company, which is one of the largest construction companies in Saudi Arabia. Thus, the core challenge of this study revolves around addressing the question: **How Can to Effect of Sustainability Criteria on Procurement Practices Within the Construction Supply Chain in El Seif?**

The importance of the Study

This study contributes to a deeper understanding of sustainable procurement practices in the construction industry in Saudi Arabia, particularly in Riyadh City. It aims to fill a gap in the existing literature by examining the influence of sustainability criteria on procurement practices within the construction supply chain. By delving into the factors that drive the adoption of sustainable procurement practices, evaluating their impact on supply chain operations, and providing actionable recommendations, this study offers valuable insights for both academic research and industry practice.

Objectives of the Study

1. Identify the key sustainability criteria considered by construction companies in Saudi Arabia.
2. Explore the factors that influence the consideration of sustainability criteria in procurement practices within the construction supply chain in El Seif Engineering Contracting Company.
3. Identify the barriers and challenges to implementing sustainable procurement practices in the construction supply chain in El Seif Engineering Contracting Co.
4. Evaluate the impact of sustainability criteria on procurement practices within the construction supply chain in El Seif Engineering Contracting Co., gauging their influence on decision-making and overall strategies.
5. Provide practical recommendations for how El Seif Engineering Contracting Company can improve its procurement practices to integrate sustainability criteria more effectively.

This research contributes not only to academic knowledge but also offers a roadmap for improving sustainability in El Seif Engineering Contracting Co. within construction supply chain. The study aims to positively impact procurement decisions, fostering a more sustainable construction industry.

Study questions

1. What are the key sustainability criteria in the construction supply chain in Saudi Arabia?
2. How do various factors influence the consideration of sustainability criteria in procurement practices?
3. What are the barriers and challenges to implementing sustainable procurement practices in the construction supply chain in El Seif Engineering Contracting Co.?

4. What is the perceived impact of sustainability criteria on procurement practices?
5. What specific strategies can El Seif Engineering Contracting Company implement to improve its procurement practices by integrating sustainability criteria?

Previous studies and theoretical framework

➤ Sustainable Procurement in the Construction Industry

The construction industry, being a significant contributor to environmental degradation and resource depletion, has seen a growing emphasis on sustainable procurement practices. Walker and Preuss (2008), in their work on "Achieving Sustainable Procurement in Construction Projects: The Pivotal Role of a Project Management Office," argue that the traditional linear model of procurement must evolve to incorporate sustainability dimensions. Recent studies by Chan and Lam (2020) highlight the shift towards sustainable procurement as a strategic approach that not only considers economic factors but also environmental and social impacts throughout the supply chain.

➤ Sustainability Criteria

To effectively implement sustainable procurement, understanding the key sustainability criteria is imperative. The literature suggests a diverse range of criteria, including but not limited to carbon footprint, waste reduction, ethical sourcing, and social responsibility (Carter and Rogers, 2008; Hervani et al., 2005). For instance, initiatives like LEED certification for buildings and the use of recycled materials in construction projects are practical examples of sustainability criteria application, illustrating the industry's commitment to reducing environmental impact.

➤ Procurement Practices

Examining existing procurement practices in the construction industry reveals a mix of traditional and emerging approaches. The work of O'Brien et al. (2019) sheds light on the prevalent use of Design-Bid-Build (DBB) models and the challenges they pose to sustainable practices. In contrast, studies by Loosemore et al. (2019) explore alternative models like Design-Build (DB) and Public-Private Partnerships (PPPs), emphasizing their potential for integrating sustainability considerations from project inception. However, barriers and challenges to implementing sustainable procurement practices, such as resistance to change and the lack of awareness, hinder widespread adoption and necessitate further exploration.

➤ The Impact of Sustainability Criteria on Procurement Practices

Research investigating the impact of sustainability criteria on procurement practices provides valuable insights. Andersen et al. (2016), in their study titled "Sustainable procurement in the public sector: an international comparative study," conducted a longitudinal study, revealing a positive correlation between the adoption of sustainability criteria and improved environmental performance in construction projects. Additionally, findings from a meta-analysis by Smith and Biesenthal (2018) suggest that organizations embracing sustainability criteria experience enhanced reputation and stakeholder relationships, further influencing procurement decision-making. While environmental and social benefits are frequently highlighted, it's crucial to delve into the economic benefits of sustainable procurement, addressing the considerations that impact decision-makers in the construction industry.

➤ Construction Supply Chain Management

Central to sustainable procurement is the effective management of the construction supply chain. Notable contributions by Christopher (2005) and Mollenkopf and Closs (2005), in their work on "Factors for Implementing Green Supply Chain Management in the Construction Industry," emphasize the

significance of integrating sustainability into supply chain management processes. Their work underscores the need for collaborative efforts, transparency, and information sharing among supply chain partners to achieve sustainability goals in the construction industry. Additionally, exploring the role of technology and innovation in enabling sustainable procurement within the construction supply chain is essential. Technologies such as blockchain for supply chain transparency and Building Information Modeling (BIM) for enhanced collaboration have shown promise in facilitating the implementation of sustainable practices.

➤ Case Studies of Sustainable Procurement in the Construction Industry

Examining case studies provides practical insights into successful sustainable procurement implementations. Walker and Preuss (2019), in their work on "Environmental consideration in procurement of construction contracts: current practice, problems and opportunities in green procurement in the Swedish construction industry," showcase the pioneering efforts of companies like Skanska in implementing a Green Procurement Policy (GPP). Similarly, the experiences of the Hong Kong Housing Authority in adopting sustainable procurement practices, as highlighted by Shen et al. (2017), offer valuable lessons, illustrating the challenges faced and strategies employed in a real-world context. Comparing and contrasting different approaches to sustainable procurement in these case studies, identifying common success factors and challenges, provides valuable insights for practitioners seeking to implement sustainable procurement practices in their own organizations.

In summary, the literature review showcases a dynamic landscape of sustainable procurement in the construction industry. From redefining traditional procurement practices to exploring the multifaceted impact of sustainability criteria, the reviewed literature provides a foundation for understanding the complexities and opportunities in fostering sustainability within the construction supply chain. However, while substantial progress has been made, gaps remain in understanding the nuanced interactions and contextual factors influencing sustainable procurement practices, providing fertile ground for further research.

Theoretical premises of study

The following research hypotheses will be tested:

- H1: There is a positive relationship between the use of sustainability criteria in procurement practices and the sustainability performance of the construction supply chain.
- H2: The factors that influence the consideration of sustainability criteria in procurement practices include government policies and regulations, organizational culture, and supplier availability.
- H3: The impact of sustainability criteria on procurement practices within the construction supply chain in Riyadh City is positive.
- H4: El Seif Engineering Contracting Company can improve its procurement practices by integrating sustainability criteria.

Methodology and research methods

This research will be conducted using a mixed-methods approach. The quantitative data will be collected through a survey in El Seif Engineering Contracting Co.. The qualitative data will be collected through interviews with key stakeholders in the construction supply chain, including representatives of El Seif Engineering Contracting Company.

The survey will be used to collect data on the following:

- The types of sustainability criteria used in procurement practices
- The factors that influence the consideration of sustainability criteria in procurement practices
- The perceived impact of sustainability criteria on procurement practices

The interviews will be used to collect more in-depth data on the same topics. The interviews will also be used to explore the experiences of El Seif Engineering Contracting Company with sustainable procurement.

Study tools (data Collection tools). (Ongoing)

- Survey questionnaire for quantitative data collection.
- Semi-structured interview guides for qualitative data collection.

Study Limitation

This study is subject to the following limitations:

- Spatial limitation: The study is limited to El Seif Engineering Contracting Co., which is a construction company located in Riyadh City, Saudi Arabia. The results of the study may not be generalizable to other construction companies in Riyadh City, let alone other construction companies in other countries or industries.
- Temporal limitation: The study is limited to the year 2023. The results of the study may not be generalizable to other years, as sustainability criteria and procurement practices may change over time.
- Human limitation: The study is based on data collected from interviews with employees of El Seif Engineering Contracting Co. The results of the study may be biased by the perceptions and experiences of these employees.
- Subjective limitation: The study is based on a qualitative research methodology, which is subjective by nature. The results of the study may be influenced by the researcher's own biases and interpretations.

List of references and preliminary sources

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