

The Challenges in Completing Site Development Projects in Saudi Arabia

Master's Degree Plan Student Preparation

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Table of Contents

Chapter 1.0 Introduction	3
1.1 Background of the study	3
1.2 Problem Statement	3
1.3 Study Aim and Purpose	4
1.4 Research Questions	4
1.4.1 Main research question.	4
1.4.1 Other research questions	4
1.5 Relevance and significance of the study	5
Chapter 2. 0 Literature Review	5
2.1 Challenges that development projects face in Saudi Arabia	5
2.2. Strategies, best practices and critical success factors.....	7
2.3 Theoretical /Conceptual Framework.....	8
Chapter 3.0 Methodology	11
3.1 Research Design.....	11
3.2 Target Population.....	11
3.3 Sampling Method and Sample size	11
3.4 Data collection	12
3.5 Data Analysis	12
3.6 Ethical considerations	12
3.7 Limitations of this study design	13
Chapter 4.0 Implications and contributions to knowledge.....	13
4.1 Practical Implications.....	13
4.2 Theoretical Implications	13
References.....	15

Chapter 1.0 Introduction

1.1 Background of the study

The construction industry is playing a critical role owing to its growing contribution to the Saudi Arabian GDP and employment, which are critical in driving economic growth in Saudi Arabia. Furthermore, the country is undergoing rapid urbanization and infrastructure development plays a critical role in this, as well as the ambitious economic diversification agenda outlined in its Vision 2030. However, the country's construction sector is experiencing delays in project completion, which has far-reaching consequences including rising project costs, job losses, loss of investor confidence, etc. (Alajmi & Memon, 2022).

Site development projects in Saudi Arabia are increasingly facing multifaceted challenges stemming from numerous factors including uncertain regulatory frameworks, environmental challenges, frequent economic fluctuations as well as cultural nuances that serve as a significant impediment to project completion, which leads to project delays, cost overruns, and poor quality (Alsulamy, 2022). Therefore, understanding the challenges that site developments face in Saudi Arabia pivotal for enhancing project management strategies to create sustainable development in this region.

1.2 Problem Statement

Despite the nation's ambitious Vision 2030 objectives and rapid urbanization that require a robust construction sector, site development projects in Saudi Arabia are experiencing persistent hurdles, impeding progress, and thwarting sustainable development efforts that are put in place to address them (Alshehri, 2019). Ranging from rigid regulatory frameworks to economic fluctuations, environmental concerns and cultural nuances that are exacerbating negative project outcomes, the existing solutions have done little to unlock the potential of the Saudi construction industry. Therefore, there is need for innovative solutions that could bridge the widening gap, between project expectations and outcomes, owing to the multiple challenges facing site development projects. (Abduljawwad, Almaktoom, & Abduljawwad, 2021).

Numerous studies have been undertaken to identifying the challenges bedeviling completion of construction projects in Saudi Arabia. However, there remains a notable gap in the existing body of literature particularly lack a comprehensive understanding of the interplay between key inhibiting factors and their collective influence on project outcomes (Alajmi & Memon, 2022). Existing studies often examine individual aspects, such as regulatory challenges or environmental

concerns, etc. that hinder completion of site development projects, lacking a holistic perspective involving both internal and external challenges affecting effective project management in the prevailing conditions leading to persistent delays, cost and quality constraints (Alshakhrit, Alshakhrit, Supeni & Zahari, 2019).

1.3 Study Aim and Purpose

The study aims to comprehensively investigate the multifaceted challenges hindering timely completion of site development projects in Saudi Arabia, with emphasis on understanding the dynamic interactions between the evolving technology, regulatory frameworks, environmental considerations, and cultural nuances, among other factors. By examining these complex interdependencies, the study will provide valuable insights into the current causes of project delays, cost overruns, and quality concerns. This will in turn facilitate development of targeted strategies and innovative interventions that could enhance project management practices and foster sustainable development infrastructure and economic development in Saudi Arabia and the middle east at large.

1.4 Research Questions

1.4.1 Main research question.

What are the key challenges hindering completion of site development projects in Saudi Arabia, how can they be effectively addressed?

1.4.1 Other research questions

1. What are the specific regulatory hurdles hindering site development projects in Saudi Arabia?
2. What environmental factors pose challenges to site development projects in Saudi Arabia?
3. How do economic fluctuations affect construction project management in Saudi Arabia?
4. What technological factors hinder project management dynamics in Saudi Arabian construction projects?
5. What cultural factors hinder project management dynamics in Saudi Arabian construction projects?
6. What strategies, best practices and critical success factors could be employed to effectively address the challenges in completing site development projects in Saudi Arabia?

7. What recommendations could help policymakers, developers, contractors, and other stakeholders in improving project management practices to foster sustainable development in site development projects in Saudi Arabia?

1.5 Relevance and significance of the study

The study examining the challenges in completing site development projects in Saudi Arabia holds immense relevance, timeliness, and significance to the Saudi Arabia construction industry in numerous ways. With the country's ambitious Vision 2030 goals as well as the rapid urbanization drive, site development projects play a critical role in driving economic growth, diversification and enhancing infrastructural development in line with the country's Vision 2030. Therefore, understanding and addressing the identified challenges effectively could enhance achievement of the nation's developmental endeavors and enhancing and improve the quality of life for Saudi Arabians.

The study comes at a time when Saudi Arabia is pursuing critical socio-economic transformations and therefore experiencing dynamic challenges including rapid technological advancements, regulatory evolution, and environmental concerns that threaten realization of its long-term development goals. Therefore, the findings from this research could provide timely insights and recommendations for enhanced decision making and sustainability in management of site development projects.

The significance of the study extends to holding potential for informing policy formulation, strategic planning, and decision-making efforts in management of site development projects in Saudi Arabia. By identifying key obstacles and management strategies, the study can contribute to improving project outcomes, reducing delays, minimizing costs, and promoting sustainable development in the region.

Chapter 2.0 Literature Review

2.1 Challenges that development projects face in Saudi Arabia

In Saudi Arabia, site development projects face numerous challenges ranging from regulatory, environmental, economic, political, cultural and technological dimensions. In this country construction projects face regulatory challenges such as complex permitting processes,

bureaucratic inefficiencies, etc. leading to project delays, administrative challenges, etc. The regulatory environment in Saudi Arabia experiences periodic revisions, amendments and updates that introduce significant uncertainty to the project planning and execution process hindering timely completion of construction projects (Fathalizadeh et al., 2021).

In their study, Ametepey, Aigbavboa & Ansah (2015) identified cultural resistance to change, low government commitment, low professional knowledge and poor legislation of the construction industry, and group other challenges into financial, political, leadership, technological and socio-cultural barriers hindering timely completion of construction projects in developing countries.

A recent study by Alshehri (2019) noted that environmental concerns present some of the major hindrances to completion of site development projects identifying particular issues including scarcity of water due to desertification, and poor waste management as some of the major barriers to timely completion of projects in Saudi Arabia. As Mohammed & Ishak (2024) noted, balancing infrastructural development with environmental sustainability in Saudi Arabia needs innovative solutions, coupled with proactive measures to mitigate ecological risks presented by the unfavorable environment conditions experienced in the country.

In another study, Alsulamy (2022) cited economic fluctuations caused by global oil price volatility, as one of the major factors with profound impact on completion of site development projects in Saudi Arabia. The study, intimated that frequent fluctuations in oil revenues have a significant influence on government spending, and infrastructural projects bear the greatest budgetary cuts that eventually affect site development project timelines, cost and sometimes quality.

The study by Mohammed & Ishak (2024) further noted that cultural nuances also have a significant influence development project dynamic such as stakeholder relations in Saudi Arabia. I. Saudi Arabia's socio-cultural also influences aspects such as community engagement in the development projects, and cultural norms, traditions as well as societal expectations have a significant influence on the decision-making processes, and conflict resolution approaches. in his doctoral thesis, Almathami (2020) posits that understanding cultural sensitivities is critical for effective communication, collaboration as well as conflict resolution among the project stakeholders whenever conflict arises.

While emphasizing the significant role of technological innovations in enhancing key site development project outcomes including efficiency of the construction process, communication and collaboration, improved productivity, etc., studies such as Alhammadi (2022) note that the

cost of deploying the current technological innovations is quite and the risk of obsolescence due to rapid technological evolutions characterized with such technologies present significant challenges to their deployment. In Saudi Arabia, concerns have been raised to the availability of skills and competencies to adequately use modern technologies such as Artificial Intelligence, Automation and Big Data Analytics to enhance outcomes for construction projects.

2.2. Strategies, best practices and critical success factors

In a study addressing challenges experienced in the Saudi Arabia construction industry, Alshehri (2019) noted that project managers need to ensure compliance with regulatory requirements by acquiring the necessary permits on time, and collaborate closely with government regulatory agencies and other stakeholders for smooth regulatory engagement and avoid delays.

In their study, Ahmad et al. (2023) advised that leveraging advanced technologies including Building Information Modeling (BIM), use of drones, big data analytics, project management software, etc. could lead to enhanced project efficiency, effective communication, and collaboration, etc. that are critical for timely completion of construction projects. The authors call for regular training and capacity building for project teams to enable effective utilization of such technologies for improved project outcomes.

In another study, Al-Tmeemy (2019) maintained that putting in robust risk assessment and management strategies could help in identifying and mitigating potential risks early and throughout the project lifecycle to avoid unforeseen challenges that could lead to negative project outcomes. In another study, Mohammed & Ishak (2024) note that conducting comprehensive risk assessments, instituting contingency plans as well as maintaining open communication between key stakeholders are critical for timely project completion.

The practice of stakeholder engagement has also been emphasized. For instance, Almathami (2020) posits that engaging with key stakeholders such as government agencies, local communities as well as project sponsors has a potential of fostering collaboration and support for the construction project objectives. In their study, Ahmad et al. (2023) add that establishing clear communication channels, commitment towards addressing key stakeholder concerns, and seeking for feedback could foster stakeholder satisfaction and construction project success.

Focusing on addressing key challenges facing construction projects in Saudi Arabia, Alshehri (2019) invoked the practice of sustainability, noting that adopting sustainable practices and integrating them into the project design, construction process, and entire project management

practices is critical for long-term environmental as well as social stewardship. The author advocates for resource efficiency, waste reduction, and use of renewable energy, which is in line with the global sustainability goals for enhanced construction project resilience and adaptability. In their study, Altahtoh & Alaskar (2018) support formation of strategic partnerships with reputable suppliers, contractors as well as consultants to minimize risks and enhance project delivery capabilities. The authors maintain that selecting partners that have proven track records as well as complementary expertise could foster collaboration and shared goals, which significantly addresses most obstacles to timely project completion.

In their study, Ahmad et al. (2022) intimate that embracing a culture of continuous improvement could enable project teams to adapt to the evolving project landscape and use the lessons learned from experiences garnered from previous projects to enhance efficiency of current project activities, processes and operations. The authors maintain that conducting post-project reviews, asking for feedback, and implementing the corrective actions realized could enhance the outcomes of the ongoing construction project.

2.3 Theoretical /Conceptual Framework

The research uses SWOT Analysis and PESTEL Analysis to identify the major challenges hindering timely completion of site development projects in Saudi Arabia.

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is critical in examining the internal factors (strengths and weaknesses) as well as the external factors (opportunities and threats) affecting a particular project or organization. In this study, a SWOT analysis is used to identify Internal strengths and weaknesses in the construction company where the research is carried out (Shabanova, Ismagilova, Salimov & Akhmadeev, 2015).

On the other hand, a PESTEL Analysis (Political, Economic, Social, Technological, Environmental, Legal) analysis has been praised for its ability to assess the broader external or macro-environmental issues affecting the performance of many projects or the larger construction industry. In this study, PESTEL analysis will be used to examine the political stability, economic trends, societal dynamics, technological advancements, environmental concerns, and legal frameworks that influence outcomes of site development projects in Saudi Arabia (Shabanova et al., 2015).

Combined, these tools helped to provide a holistic view of both the construction companies and the construction industry as well as the internal and external factors offering a comprehensive

understanding of the micro and macro-environmental factors hindering timely completion of construction projects in Saudi Arabia.

Initial findings of the SWOT and PESTEL analyses are summarized in table 1 and table 2 below.

Table 1: SWOT Analysis

Strengths	Weaknesses
- Abundant natural resources supporting construction projects	- Bureaucratic red tape and complex regulatory processes
- Government investment in infrastructure development	- Limited skilled labor force
- Strategic location and connectivity for trade and logistics	- Dependency on oil revenues, susceptible to economic fluctuations
- Strong government support for Vision 2030 initiatives	- Environmental concerns and scarcity of water resources
Opportunities	Threats
- Adoption of advanced technologies for project efficiency	- Geopolitical tensions impacting project financing and resources
- Diversification of economy reducing reliance on oil	- Volatility in global oil prices affecting project funding
- Growing demand for sustainable construction practices	- Socio-cultural factors affecting project collaboration and communication
- Potential for international partnerships and investments	- Legal and regulatory changes affecting project timelines and costs

Table 2: PESTEL Analysis

Political	Economic
- Stable political environment supporting long-term project planning	- Dependency on oil revenues leading to economic volatility
- Government initiatives like Vision 2030 driving infrastructure development	- Impact of global economic trends on project financing and investments
- Regulatory reforms to attract foreign investment in construction sector	- Currency fluctuations affecting project costs and financing
Social	Technological
- Cultural diversity influencing project dynamics and stakeholder engagement	- Adoption of advanced construction technologies improving project efficiency
- Growing urbanization driving demand for infrastructure development	- Integration of Building Information Modeling (BIM) for better project coordination
- Community expectations for sustainable and socially responsible projects	- Challenges in implementing technology due to workforce skill gaps
Environmental	Legal
- Environmental concerns such as water scarcity and waste management	- Regulatory compliance and permitting processes impacting project timelines
- Increasing focus on sustainable construction practices	- Legal frameworks governing land acquisition and property rights
- Potential for environmental impact assessments influencing project design	- Legal disputes and contractual issues affecting project continuity

Chapter 3.0 Methodology

3.1 Research Design

The research adopts a qualitative research design comprising of a comprehensive literature review and in-depth interviews among key players in the construction industry in Saudi Arabia. The literature review presents a comprehensive understanding of the existing knowledge exploring the key findings on key trends about the challenges hindering timely completion of site development projects in Saudi Arabia and strategies, critical success factors and best practices for timely completion of construction projects. This will form the foundation for the research (Rubin & Rubin, 2012). On the other side, the in-depth interviews will capture the nuances, insights and perspectives of key stakeholders involved in management of construction projects in Saudi Arabia. The open-ended interviews also for probing questions, exploration of complex issues and clarification of issues, thereby enriching the research findings (Creswell & Creswell, 2017).

3.2 Target Population

The research seeks to conduct interviews on key stakeholders in construction project management in Madina. The research will involve project managers, consultants, and key clients for major construction projects in Madina to develop a comprehensive understanding of the challenges facing construction projects in Saudi Arabia and recommend strategies, critical success factors and best practices for timely completion of construction projects in the country.

3.3 Sampling Method and Sample size

The research will use purposive sampling to identify information-rich respondents who have the requisite experiences and insights to share to the study. Purposive sampling allows for flexibility for the researcher to recruit targeted respondent who can contribute meaningful insights to the study (Creswell & Plano Clark, 2011).

Given that the research has adopted a qualitative approach of using in-depth interviews, and recruiting respondents through non-probabilistic purposive sampling method, use of a small sample size is considered appropriate. As Vasileiou et al. (2018) notes, the appropriateness of a sample size is determined by the richness of the information possessed by the selected respondents. Therefore, this research targets to recruit 5 information-rich participants to share their insights to enrich findings from the literature review.

3.4 Data collection

Data collection in this study will be undertaken through in-depth interviews with selected respondents. The interviews will be guided using a semi-structured interview guide prepared in advance. A semi-structured interview guide is important in ensuring all questions are covered, and mitigates problems of subjectivity and mixing of issues in the interview process (Newcomer et al., 2015).

3.5 Data Analysis

Thematic analysis is a qualitative research method used to identify, analyze, and interpret patterns or themes within qualitative data. It involves systematically coding data to uncover recurrent themes or patterns of meaning. Researchers immerse themselves in the data, identifying commonalities, differences, and relationships. Through a process of coding and categorizing, themes emerge, capturing the underlying essence or narrative of the data. Thematic analysis offers flexibility in its approach, allowing researchers to explore both manifest and latent content within the data, providing rich insights into participants' experiences, perspectives, and the phenomenon under investigation (Dawadi, 2020).

3.6 Ethical considerations

The research will be undertaken following ethical considerations guiding qualitative studies. Ethical considerations in research involving companies include obtaining consent for data collection and ensuring transparency about the research purpose and potential impacts. Informed consent from participants is crucial, involving clear communication about their rights, risks, and benefits, and their voluntary agreement to participate. Privacy and confidentiality of participants are paramount, requiring safeguarding of sensitive information, secure data storage, and anonymity or pseudonymity where necessary, to protect participants' identities and ensure trustworthiness and integrity in research practices. Respecting these ethical principles upholds participants' autonomy, dignity, and well-being throughout the research process as intimated in Creswell (2013).

3.7 Limitations of this study design

imitations of the above research approach may include potential biases inherent in qualitative methods, such as researcher subjectivity and interpretation bias. Limited generalizability may arise due to the qualitative nature of the study, as findings may not be representative of the entire population. In-depth interviews may be time-consuming and resource-intensive, limiting the sample size and scope of the study. Ethical considerations, such as obtaining consent and ensuring privacy, can pose challenges in maintaining confidentiality and trust. Additionally, reliance on self-reported data may introduce response bias, affecting the validity and reliability of findings.

Chapter 4.0 Implications and contributions to knowledge

4.1 Practical Implications

The findings from this research can inform policy decisions and improve the process of completing site development projects in Saudi Arabia. By identifying key challenges and providing insights into effective strategies, stakeholders can implement targeted interventions to streamline project management practices, reduce delays, and enhance project outcomes. Additionally, these findings can make a case for concrete changes in regulatory frameworks, technology adoption, and stakeholder engagement, facilitating sustainable development and economic growth in the region.

4.2 Theoretical Implications

This research contributes to the strengthening of existing theories and models in construction management by providing empirical evidence and insights into the challenges faced in completing site development projects in Saudi Arabia. By challenging assumptions and expanding understanding of project dynamics within the Saudi Arabian context, this work creates a basis for further research in areas such as regulatory compliance, technological innovation, and cultural influences on project management practices. Additionally, it opens avenues for theoretical development and refinement in the field of construction management and beyond.

المستخلص

الهدف من هذه الدراسة هو تناول التحديات التي يواجهها قطاع الأنشاءات في المملكة العربية السعودية، حيث تشهد البلاد توسعاً حضرياً سريعاً ويلعب تطوير البنية التحتية دوراً حاسماً في هذا، بالإضافة إلى أجندة التنويع الاقتصادي الطموحة المبينة في رؤيتها 2030.

وتهدف الدراسة إلى إجراء تحقيق شامل في التحديات المتعددة الأوجه التي تعيق استكمال مشاريع تطوير المواقع في المملكة العربية السعودية في الوقت المناسب، مع التركيز على فهم التفاعلات الديناميكية بين التكنولوجيا المتطورة، والأطر التنظيمية، والاعتبارات البيئية، والفروق الثقافية الدقيقة، من بين عوامل أخرى. ومن خلال دراسة هذه الترابطات المعقدة، ستوفر الدراسة رؤى قيمة حول الأسباب الحالية لتأخير المشروع، وتجاوز التكاليف، والمخاوف المتعلقة بالجودة. وهذا بدوره سيسهل تطوير الاستراتيجيات المستهدفة والتدخلات المبتكرة التي يمكن أن تعزز ممارسات إدارة المشاريع وتعزز البنية التحتية للتنمية المستدامة والتنمية الاقتصادية في المملكة العربية السعودية والشرق الأوسط بشكل عام.

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تحديات انجاز مشاريع التطوير في المملكة العربية السعودية

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