

Midocean University

Management college

Specialization in project management



“Study the effects of using the Agile methodology to accomplish projects success in light of Vision 2030 of the Kingdom of Saudi Arabia”

دراسة تأثير استخدام منهجية Agile لتحقيق نجاح المشاريع في ضوء

رؤية 2030 للمملكة العربية السعودية

Graduation project

Preparation:

Name	ID
SULTAN MUDAYSH ALQAYSI	222000262
SUAD ALI BAJAWI	222000261

Supervisor

Dr. Walid Soliman

1444/2023

Summary:

The main aim of our study is to investigate the effects of implementing Agile methodology in project management within the distinctive context of Saudi Arabia, considering the objectives and strategies outlined in Vision 2030. For the purpose and objectives of this study the researcher will apply quantitative method and the nature of the thesis requires choosing this method. The gathering of data will be conducted using various secondary sources, including published books and articles and also the questionnaire will be selected due to its capacity to accommodate a larger pool of prospective respondents, mitigate any potential personal bias that may occur during the questionnaire, and provide equal opportunity for respondents to answer the questions under comparable circumstances. The sample population will be some of the project owners operating inside the territory of the Kingdom of Saudi Arabia. The study's sample will be selected using a simple random sampling method to choose the participants. In this study, the data from the questionnaire will be analyzed by statistical analysis carried out with the SPSS program. The outcomes are anticipated to validate the hypothesis that implementing Agile methodology in project management will increase the rate of successful projects. This can be assessed through the timely and cost-effective completion of the project, in accordance with the predetermined scope and quality criteria. Agile is recognized for its adaptability and flexibility. Agile methodologies may enable projects to respond more effectively to shifting priorities and requirements in accordance with Vision 2030, according to the findings of the study.

Introduction

In a rapidly changing global landscape, the success of any nation hinges upon its ability to adapt, innovate, and thrive in an environment characterized by uncertainty and evolving challenges. In this context, the Kingdom of Saudi Arabia has set an ambitious and transformative agenda through its Vision 2030, which aims to diversify the economy, empower its people, and position the nation as a global hub for trade and investment. As part of this visionary journey, the effective execution of projects is pivotal for realizing the nation's economic, social, and technological aspirations.

Agile methodology, initially rooted in the software development world, has increasingly gained attention as a valuable approach to project management in various industries and domains. Agile principles emphasize flexibility, collaboration, and responsiveness to change, making it a compelling choice for organizations operating in dynamic and uncertain environments.

The adoption and implementation of the agile management strategy in project development processes is still relatively uncommon among most organisations today. However, recent studies have shown that organisations worldwide are increasingly adopting agile management practices, particularly in the IT sector, due to their long-term benefits, as opposed to the historically used waterfall management practices. Prior research has emphasized the significance of agile management practices and has substantiated their positive influence on organisational performance (Gligor, et al. 2015; Kerzner, 2017). Regarding management trends, a recent global report by PMI surveyed 727 executive members involved in 3,234 projects across various regions including Europe, Asia Pacific, North America, Latin America, Middle East, Africa, and the Caribbean. The report suggests that implementing agile management practices could potentially enhance organisational productivity. Thus, indicating the influence of agile management practices on the

success of organisations (Langley, 2017). In addition, a recent study conducted by Ambysoft found that agile management practices had a success rate of 55%, while waterfall management practices only achieved a success rate of 29%. The survey also stated that 36% of the projects that were carried out using agile management practices faced difficulties and needed to compromise on some restrictions in order to complete the projects. Conversely, the waterfall management practices were attributed to 67% of the projects that had difficulties. According to the study, agile management practices were found to be responsible for only a minimal 3% of project failure rate (Ambler SW., 2018). Hence, providing a rationale for the positive influence of agile management practices on improved performance metrics. However, there is still a need to do a thorough investigation into the specific effects of integrating agile management practices on project performance, taking into account all relevant factors (Serrador & Pinto, 2015; van Oorschot, et al, 2018).

Regarding the organisational achievements in the current research, the success of initiatives is frequently hindered by the significant complexity encountered by companies. If complexity is not promptly handled, it can escalate into possible dangers and ultimately lead to a fall in performance that could jeopardize the very existence of an organisation. Based on current research, it has been indicated that implementing appropriate management practices can help reduce the complexity of a project (Maylor & Turner, 2017; Zhu & Mostafavi, 2017). In their recent study, Sohi et al. (2016) were able to partially substantiate the correlation between agile management practices and reduced project complexity.

This study seeks to investigate the effects of implementing Agile methodology in project management within the distinctive context of Saudi Arabia, considering the objectives and strategies outlined in Vision 2030. By examining the intersection of Agile principles and the

Kingdom's visionary goals, this research endeavors to shed light on the potential benefits, challenges, and opportunities associated with Agile project management.

Problem Statement

Vision 2030 is a colossal pledge to diversify Saudi Arabia's economy, improve social well-being, and promote technological innovation. This innovative plan requires several projects across industries to succeed. Traditional project management methods in the Kingdom may not meet Vision 2030's dynamic and adaptable needs. Saudi Arabia's hierarchical and inflexible project management practices can make it difficult to quickly respond to changing project needs, stakeholder demands, and unexpected problems. Traditional methods may not adequately address the Agile methodology's emphasis on customer-centricity and continual improvement.

Agile approach, established in the software industry, is known worldwide for emphasizing flexibility, cooperation, and change responsiveness to improve project performance. The adoption of Agile practices in Saudi Arabia under Vision 2030 is underexplored. This leaves open the question of whether Agile approach can solve the challenges of Vision 2030-aligned project success.

Can Agile technique solve Vision 2030's project management problems, and if so, what are its pros, cons, and opportunities? Agile methodology and Vision 2030 have not been extensively studied, leaving decision-makers, project managers, and organisations without a clear understanding of how to optimize project management practices to achieve Saudi Arabia's transformative vision. This research investigates how Agile approach affects Vision 2030 project success to close this gap. It will determine if Agile concepts and practices can connect project execution with national strategic goals. It will also examine Saudi Arabia's Agile adoption

challenges and enablers, acknowledging that cultural, regulatory, and operational issues may greatly impact Agile practices.

Significance of the study

This research carries substantial significance for a multitude of stakeholders engaged in project management and the effective execution of Vision 2030. To begin with, this research provides organisations and project management practitioners in Saudi Arabia with significant insights regarding the efficacy of Agile methodologies in attaining successful projects. By comprehending the manner in which Agile corresponds with the stated aims and objectives in Vision 2030, organisations can devise and execute Agile methodologies that are precisely customized to the Saudi Arabian environment. This research endeavor will ascertain the advantages and obstacles linked to Agile project management within this distinctive socio-economic context. By doing so, it will empower organisations to make well-informed choices and modify their project management methodologies accordingly. Furthermore, through an examination of the effects of Agile methodology implementation on milestones, expenses, stakeholders' contentment, quality, and time adherence, the study will furnish organisations with actionable recommendations to enhance project results and fulfil the objectives outlined in Vision 2030. Furthermore, the research carries substantial importance for governmental bodies and policymakers who are actively engaged in promoting the effective execution of Vision 2030. Through an examination of Agile methodologies, this research endeavor will illuminate the extent to which project management practices contribute to the achievement of Vision 2030 goals. The results of this study have the potential to provide valuable insights for policymakers and regulators concerning project management in Saudi Arabia. This could facilitate the establishment of a conducive atmosphere that promotes the acceptance and execution of Agile methodologies. This may result in improved

project execution, heightened operational effectiveness, and the successful realization of the objectives outlined in Vision 2030.

Research Objectives

1. To examine the alignment between the Agile methodology and the goals and objectives outlined in Vision 2030 of the Kingdom of Saudi Arabia
2. To evaluate the impact of Agile project management on project success factors within the Saudi Arabian context.
3. To identify and analyze the specific challenges and opportunities associated with the adoption of Agile methodologies in Saudi Arabia.

Research Questions

1. To what extent is Agile methodology applicable and effective in the context of Vision 2030 projects in Saudi Arabia?
2. What is the impact of implementing Agile methodologies on project success within the Kingdom of Saudi Arabia in the light of Vision 2030's objectives?
3. What are the specific challenges and opportunities associated with implementing Agile methodologies in the Kingdom of Saudi Arabia for Vision 2030 projects?

Research Hypotheses

1. There is a statistically significant relationship between the effects of using the Agile methodology and projects success in light of Vision 2030 of the Kingdom of Saudi Arabia.
2. There is no statistically significant relationship between the effects of using the Agile methodology and projects success in light of Vision 2030 of the Kingdom of Saudi Arabia.

Literature review

According to Ciric Lalic, et al. (2022), Their study sought to determine whether the impact of various project management approaches (traditional, agile, and hybrid) on project success differs, assuming that project success is a multidimensional phenomenon. Furthermore, the authors aimed to investigate whether particular attributes of the projects served as moderators for these impacts. These were empirically examined by the authors using a sample of 227 project professionals from around the globe. An exploratory factor analysis (EFA) was conducted on the dimensions of project success in order to verify the constitution of these factors in relation to their manifest variables. The profiles of respondents were differentiated among agile, hybrid, and conventional project management approaches using the K-means cluster method. ANOVA tests were utilized to examine the significance of the differences between research groups and to test the hypotheses. The authors provided evidence that the agile approach yields a more substantial positive influence on two of the five dimensions of project success that are the focus of this study (team impact and future planning) compared to the traditional approach. The research holds significance for academicians in the development of project management contingency theory and for project management practitioners in the customization of the success-oriented project management approach. In order to examine the effects and efficacy of various project management methodologies (traditional, agile, hybrid) on the various facets of project success within distinct contextual circumstances (e.g., industry of the organisation, type of project, novelty, technology, complexity, and pace), the authors developed a research framework. Extending data on the effect of these approaches on the success of projects and comparing them to pertinent results and findings from prior research constitutes the paper's primary contribution.

In the study conducted by Koi-Akrofi et al. (2019), the aims were to enhance comprehension regarding the notion of agile IT project management, including its definition and distinctions from other similar concepts. In addition, it sought to compare the advantages and disadvantages of agile and conventional approaches to IT project management in a typical industry context, as well as the difficulties of adopting an exclusively agile methodology. It consists solely of a literature review of peer-reviewed articles obtained primarily from Google Scholar. It was disclosed that the advantages of agile methods surpass those of conventional approaches. However, the execution of agile presents numerous obstacles stemming from various factors, with organisational culture and project team empowerment being the most significant. This has led to several industries continuing to employ conventional approaches despite the indisputable advantages of agile. A different school of thought holds that the way forward is through the combination of the two paradigms.

Altuwaijri and Ferrario (2022) conducted a study which identifies Agile as a well-established software development methodology that aids in the advancement of software by enhancing quality, customer engagement, time to market, and cost efficiency. The determinants that support its adoption have been the subject of extensive research. Nevertheless, the majority of these investigations have been undertaken in developed regions, primarily in North America and Europe, while only a limited number have been conducted in developing countries, such as the Middle East. This is problematic in light of the software industry's economic and strategic significance in countries such as Saudi Arabia, where Agile adoption is still in its infancy despite substantial investments made in recent years to diversify the country's oil-dependent economy. Hence, the present empirical study aims to examine the determinants that impact the adoption of Agile methodologies by small and medium-sized software enterprises (SMEs) in Saudi Arabia. To this purpose, twelve software practitioners representing three software SME's participated in in-depth

interviews. The results of our study indicate that human factors, including customer engagement, team competence, organisational culture, and national culture, have a greater influence on Agile adoption than technical factors, such as the accessibility of particular tools or techniques.

Digital transformation, according to Alruwaili et al. (2019), facilitates the implementation of new forms of governance, business, and social reform. It additionally serves as the foundation for the 2030 Vision in numerous nations, including Saudi Arabia. By adhering to the Agile Manifesto, software development was effectively and dependably managed. Moreover, incremental software release delivery ensures that stakeholders are actively involved in the product's development process, that their feedback is incorporated into all functionalities, and that any modifications to requirements are predicated on practical application of the software. This ensures the delivery of customer-requested functionalities and reduces the risk of project failure. As a result, the majority of software companies have adopted Agility as a surefire and uncomplicated method for implementing digital solutions for their organisations. This study investigates the attributes of agile tools and frameworks, including Scrum and XP, as well as Jira, Agilo, and others, which support the process of digital transformation. Analyse the effectiveness and productivity of agile frameworks in comparison to conventional SDLC methods. The paper concludes by discussing the attributes of an agile framework that facilitate digital transformation, including customer engagement, flexible requirements, and incremental development.

To López-Alcarria et al. (2019) Education for Sustainable Development (ESD) and lifelong learning necessitate contemporary pedagogical tools and methodologies that facilitate the dissemination of critical competencies including adaptability, responsibility, creativity, dialogue, self-assurance, respect, emotional intelligence, and systemic thinking. The current inclination towards implementing Agile methodologies to oversee projects across various domains can serve

as a beneficial instrument for communicating these capabilities on account of their foundational participative, collaborative, and constructionist principles. Thus, first accounts of the implementation of Agile Methodologies in the field of education, which gave rise to the term Agile Education, are beginning to surface in the academic literature. In order to examine how this contemporary pedagogical instrument is being implemented to cultivate critical sustainable development competencies in the realm of education, this study conducts a systematic review. Eleven out of the 121 studies that were analysed yield results that establish a direct correlation between Agile Education and critical ESD competencies. It is demonstrated that Agile Education produces an environment conducive to the development of conscientious and environmentally conscious individuals, while simultaneously enhancing faculty and student performance, satisfaction, and motivation.

Methodology

1. Research Method

The research methodology is defined by Williams et al., (2011) as the holistic steps a researcher takes to embark on a research project. Therefore, in order to get results, a quantitative analysis approach deals with quantification and empirical variables. In order to answer questions such as who, how much, when, where, where, how many, and how, it includes the use and study of numerical data using various statistical techniques. Expatriating on this concept, Apuke (2017) defines methods of quantitative analysis as describing a problem or phenomenon by collecting numerical data and analyzing it using statistical methods, statistics in particular.

Mohajan (2020) notes that "quantitative research employs investigation strategies such as experiments and surveys, and collects data on predetermined statistical data producing tools." It is

vital to analyze the gap between quantitative and qualitative research, after understanding to an extent what quantitative research is all about.

For the purpose and objectives of this study the researcher will apply quantitative method and the nature of the thesis requires choosing this method.

2. Data Collection

Data collection refers to the systematic and defined process of acquiring and evaluating information on specific variables of interest. This approach allows researchers to address specific research questions, test hypotheses, and analyze outcomes (Gliner, Morgan & Leech, 2016). Data gathering in academic areas, such as the physical and social sciences, the humanities, and business, heavily emphasizes the research component. While techniques may differ across different fields, the primary focus remains on ensuring precise and truthful choices. The primary goal of data collection is to gather high-quality information that can be transformed into a comprehensive data analysis and utilized to produce compelling and reliable responses to given inquiries.

A. Secondary Data

Secondary data allows the researcher to gain a deeper understanding of the study issue and expand the existing information on the research problem. Furthermore, it provides a robust basis for furthering the research and aids in discerning pertinent research methodologies. Secondary data can enhance the understanding and analysis of main data (Hair, Page & Brunsveld, 2019). The research is undertaken by thoroughly evaluating relevant research articles through a comprehensive literature review.

The gathering of data will be conducted using various secondary sources, including published books and articles.

B. Primary Data

Pandey & Pandey (2021) define primary information as data that is directly acquired by the researcher regarding the subject being studied. They contend that primary data collection is necessary when secondary data is inadequate to address the study questions. Primary data can be collected through various means, including surveys, comments, and interviews (Al Kilani & Kobziev, 2016). Both quantitative and qualitative research approaches require familiarity with primary data gathering procedures. However, the selection of a method depends on the study's purpose, resource availability, and researchers' expertise.

The questionnaire will be selected due to its capacity to accommodate a larger pool of prospective respondents, mitigate any potential personal bias that may occur during the questionnaire, and provide equal opportunity for respondents to answer the questions under comparable circumstances.

3. Population and Sample Size

The study's population of interest encompasses individuals, groups, organizations, or other entities to whom the study's findings can be extrapolated or applied (Asiamah, Mensah & Oteng-Abayie, 2017). Furthermore, the study's primary emphasis is on the target population of the investigation. Demographics not only provide the reader with ambient and contextual cues, but also determine the extent of an investigation. These limitations impose inherent restrictions on the research, enabling the researcher to uphold the requisite degree of focus and prohibiting the generalization of conclusions to all circumstances. By establishing boundaries, the researcher can effectively distinguish subpopulations, including the target population and sample, and ensure that these groupings are aligned within the research framework.

The sample population will be some of the project owners operating inside the territory of the Kingdom of Saudi Arabia.

4. Sampling

Sampling is the process of selecting a subset of a target population that accurately represents the whole population from a statistical perspective. Sampling is an essential technique for researchers since the population of interest is typically too large to include in a study all at once. Statistically representative samples are those that accurately reflect the characteristics of the broader populations they represent. Additionally, these samples should be sufficiently large to allow for thorough exploration of the research problems at hand (Lakens, 2022).

The study's sample will be selected using a simple random sampling method to choose the participants.

5. Data Analysis

According to (Marshall & Rossman, 2014), "data analysis" is "the procedure for creating meaning from data by identifying patterns and drawing inferences." It's a creative and exciting process that's also been described as untidy, ambiguous, and time-consuming. Data science, in its broadest meaning, is the process of interpreting, analyzing, and theorizing data in order to draw conclusions about the relationships between different types of data. This process is not linear, however. Data analysis, it would seem, necessitates the application of logic to the research process.

In this study, the data from the questionnaire will be analyzed by statistical analysis carried out with the SPSS program.

Structure of the Thesis

This section outlines the thesis structure, which will contain five chapters as below:

- Chapter 1: It will offer research background, problem statement, research questions, research objectives, research significance and definition of key terms.
- Chapter 2: The literature review enhances the thesis as it will include the theoretical framework and previous studies.
- Chapter 3: It will describe the methodology that will be used in this thesis.
- Chapter 4: It will include the data analysis and research findings of the study.
- Chapter 5: It will include the conclusion and recommendations.

References

1. Al Kilani, M., & Kobziev, V. (2016). An overview of research methodology in information system (IS). *Open Access Library Journal*, 3(11), 1-9.
2. Alruwaili, F., Alrajihi, M., & Saeedi, K. (2019). How Agile Development and Its Tools Support Digital Transformation. *International journal of computers & technology*.
3. Altuwaijri, F. S., & Ferrario, M. A. (2022). Factors affecting Agile adoption: An industry research study of the mobile app sector in Saudi Arabia. *Journal of Systems and Software*, 190, 111347.
4. Ambler SW. (2018). IT Project Success Rates Survey Results. Ambysoft.
5. Apuke, O. D. (2017). Quantitative research methods: A synopsis approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 33(5471), 1-8.
6. Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*, 22(6), 1607.
7. Ciric Lalic, D., Lalic, B., Delić, M., Gracanin, D., & Stefanovic, D. (2022). How project management approach impact project success? From traditional to agile. *International Journal of Managing Projects in Business*, 15(3), 494-521.
8. Gligor, D. M., Esmark, C. L., & Holcomb, M. C. (2015). Performance outcomes of supply chain agility: when should you be agile? *Journal of operations management*, 33, 71-82.
9. Gliner, J. A., Morgan, G. A., & Leech, N. L. (2016). *Research methods in applied settings: An integrated approach to design and analysis*. Routledge.
10. Hair, J. F., Page, M., & Brunsveld, N. (2019). *Essentials of business research methods*. Routledge.

11. Kerzner, H. (2017). *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons.
12. Koi-Akrofi, G. Y., Koi-Akrofi, J., & Matey, H. A. (2019). Understanding the characteristics, benefits and challenges of agile it project management: A literature based perspective. *International Journal of Software Engineering & Applications (IJSEA)*, 10(5), 25-44.
13. Lakens, D. (2022). Sample size justification. *Collabra: Psychology*, 8(1), 33267.
14. Langley, M. A. (2017). Success Rates Rise: Transforming the high cost of low performance. *PMI, editor. Pulse of the Profession* 2017, 32.
15. López-Alcarria, A., Olivares-Vicente, A., & Poza-Vilches, F. (2019). A systematic review of the use of agile methodologies in education to foster sustainability competencies. *Sustainability*, 11(10), 2915.
16. Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications.
17. Maylor, H., & Turner, N. (2017). Understand, reduce, respond: project complexity management theory and practice. *International journal of operations & production management*, 37(8), 1076-1093.
18. Maylor, H., & Turner, N. (2017). Understand, reduce, respond: project complexity management theory and practice. *International journal of operations & production management*, 37(8), 1076-1093.
19. Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, 9(4), 50-79.
20. Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.

21. Serrador, P., & Pinto, J. K. (2015). Does Agile work? —A quantitative analysis of agile project success. *International journal of project management*, 33(5), 1040-1051.
22. Sohi, A. J., Hertogh, M., Bosch-Rekveldt, M., & Blom, R. (2016). Does lean & agile project management help cope with project complexity? *Procedia-social and behavioral sciences*, 226, 252-259.
23. van Oorschot, K. E., Sengupta, K., & Van Wassenhove, L. N. (2018). Under pressure: The effects of iteration lengths on agile software development performance. *Project Management Journal*, 49(6), 78-102.
24. Williams, F. I., & Hoell, R. C. (2011). Understanding and Quantifying the Impact of Freeman and Medoffs What Do Unions Do? A Quarter of a Century Later. *Journal of Business & Economics Research (JBER)*, 9(9), 13-28.
25. Zhu, J., & Mostafavi, A. (2017). Discovering complexity and emergent properties in project systems: A new approach to understanding project performance. *International journal of project management*, 35(1), 1-12.