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The influence of Agile trends in Construction Projects in KSA

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Abstract :

This study examines the impact of the agile trend on the construction industry in Saudi Arabia by investigating the integration of agile values and principles into construction project management practices. The research aims to understand the level of influence Agile has on the construction industry in Saudi Arabia. The topic choice was motivated by the growing global adoption of Agile project management in the construction industry. Furthermore, there is a need to explore agile applicability and effectiveness in construction industry in Saudi Arabia.

The study follows a 3-step approach, which includes conducting a literature review, collecting data, and consolidating the findings. 412 workers from the construction industry in Saudi Arabia participated in the study. The objectives of the study are to determine the influence of Agile on the construction industry, evaluating the impact of Agile values and principles on workers, and identifying the most and least incorporated Agile values and principles.

The research findings offer valuable insight on the influence of Agile project management in the construction industry in Saudi Arabia. The study shows a significant influence of Agile values and principles on project management practices in the construction industry in Saudi Arabia, and a high degree of incorporation was observed .

The study findings are of great significance. Construction industry professionals and stakeholders can leverage these results to enhance project management practices and improve project outcomes. The study suggests further exploration of Agile frameworks specifically tailored to the construction industry and recommends raising stakeholders' awareness about the benefits of Agile project management. Furthermore, the research proposes a professional vision that involves seeking government support for the adoption of Agile practices in the construction industry in Saudi Arabia.

المستخلص:

تبحث هذه الدراسة في تأثير الاتجاه الرشيق على صناعة البناء في المملكة العربية السعودية من خلال التحقيق في دمج القيم والمبادئ المرنة في ممارسات إدارة مشاريع البناء. يهدف البحث إلى فهم مستوى تأثير الإدارة الرشيقة على صناعة البناء في المملكة العربية السعودية. يكمن الدافع وراء اختيار الموضوع هو الاهتمام العالمي المتزايد لإدارة المشاريع الرشيقة في صناعة البناء. علاوة على ذلك، هناك حاجة لاستكشاف قابلية التطبيق الإدارة الرشيقة وفعاليتها في صناعة البناء في المملكة العربية السعودية.

تتبع الدراسة نهجاً من 3 خطوات، والذي يتضمن إجراء مراجعة الأدبيات وجمع البيانات وتحليل النتائج. شارك في الدراسة 412 عاملاً في مجال البناء في المملكة العربية السعودية. تتمثل أهداف الدراسة في تحديد تأثير الإدارة الرشيقة على صناعة البناء، وتقييم تأثير قيم ومبادئ الإدارة الرشيقة على العاملين فيها، وتحديد قيم ومبادئ الإدارة الرشيقة الأكثر والأقل اندماجاً في مجال التشييد.

تقدم نتائج البحث نظرة قيمة حول تأثير إدارة المشاريع الرشيقة في صناعة البناء في المملكة العربية السعودية. تظهر الدراسة تأثيراً كبيراً لقيم ومبادئ الإدارة الرشيقة على ممارسات إدارة المشاريع في صناعة البناء في المملكة العربية السعودية، ولوحظت درجة عالية من التأثير عليها.

نتائج الدراسة ذات أهمية كبيرة. يمكن للمهنيين وأصحاب المصلحة في مجال البناء الاستفادة منها لتعزيز ممارسات إدارة المشاريع وتحسين نتائج المشاريع. تقترح الدراسة مزيداً من الاستكشاف لأطر الإدارة الرشيقة المصممة خصيصاً لمجال البناء وتوصي بزيادة وعي أصحاب المصلحة بفوائد إدارة المشاريع الرشيقة. علاوة على ذلك، يقترح البحث رؤية مهنية تتضمن السعي للحصول على دعم حكومي لاعتماد ممارسات الإدارة الرشيقة في صناعة البناء في المملكة العربية السعودية.

First Chapter

1.1 Introduction:

Agile project management has emerged as a response to the increasing complexity, volatility, uncertainty, and ambiguity of software development industry projects (Augustine, 2005). From its successful implementation in the software development industry, Agile has become a trend in project management. Agile has demonstrated many benefits realization from its adaptation such as increased flexibility and adaptability, reduced risk, improved communication and collaboration, increased customer satisfaction, and improved quality (Ekström & Pettersson, 2016; Mohammed & Jasim, 2018). Many industries have become influenced by Agile project management and sought after the transformation of its project management methods (Krishna, 2019).

Construction industry (IC) worldwide is also recognized the benefits of agile project management. Many construction projects worldwide have opted for agile project management. The benefits of agile project management in construction have been highlighted in various studies and publications. According to the PMI 2021 published Pulse Report, the adoption of agile project management in construction industry has increased from 19% in 2020 to 28% in 2021. The report indicates a growth in popularity and effectiveness of agile project management (PMI, 2021). Another report published by the Agile Alliance in 2019 emphasized the positive outcomes of agile project management in construction, including improved communication, collaboration, risk reduction, efficiency, productivity, and customer satisfaction. This report cited several case studies that demonstrated the successful implementation of agile project management methodologies (Agile Alliance, 2019).

Construction industry in Saudi Arabia acts as a key component of Saudi Arabia vision 2030, as it supports the development of various sectors and infrastructure necessary for achieving the goals outlined in Vision 2030. Such translate in Infrastructure Development, Tourism and Entertainment, Real Estate and Housing, and Industrial Expansion. Therefore, this research aims to unveil whether the construction industry is influenced by the agile trend through examination of agile values and principles in project management practices in the construction industry in Saudi Arabia.

Second Chapter

2.1 The research problem:

The research problem is that there is no data was found addressing the following:

- Is the construction industry in Saudi Arabia is influenced by the agile trend?
- Do workers in the construction industry in Saudi Arabia influenced by agile values and principles?
- What are the most and the least incorporated agile values and principles in the construction industry in Saudi Arabia?

2.2 Importance of the research:

The importance of the research is it provides an insight into the following:

- To identify whether the construction industry in Saudi Arabia is influenced by the agile trend.
- To identify if workers in the construction industry in Saudi Arabia influenced by agile values and principles.
- To identify the most and least incorporated agile values and principles in the construction industry in Saudi Arabia.

The information and conclusion provided by the research will help cover a geographical gap in academic database and build a foundation for other researchers and professionals to direct and build upon this topic.

Third Chapter

3.1 Agile Project Management

Agile project management (APM) is a project management (PM) approach that focuses on being flexible while delivering working products continuously. APM is built upon a set of values and principles which were introduced in the Agile Manifesto in 2001. These values and principles act as a driver for APM practices. APM embraces the agile mindset and emphasizes the importance of being agile over doing agile. Doing agile without being agile will contribute to the failure of implementing agile methodologies, hence not obtaining the benefits of being agile (Manifesto for Agile Software Development, 2001).

“Agile is a mindset. Described by 4 values. Defined by 12 principles. Manifested through an unlimited number of practices.” (PMI, 2017, p. 12).

3.1.1 Agile Values:

Agile is defined by four fundamental values that serve as the foundation for Agile Project Management (APM) practices. These values emerged as a response to dissatisfaction with the traditional approach to project management. Traditional project management methodologies were characterized by rigid processes, a heavy reliance on documentation, a focus on contracts, and resistance to change within projects (Abdel-Hamid & Madnick, 2003; Highsmith, 2004). In contrast, Agile aims to address these issues and prioritize the following values:

1. Individuals and Interactions over Processes and Tools.
2. Working Software over Comprehensive Documentation.
3. Customer Collaboration over Contract Negotiation.
4. Responding to Change over Following a Plan.

These Agile values form the guiding principles that underpin Agile Project Management practices. By embracing these values, teams can foster a more collaborative, adaptive, and customer-centric approach to project delivery, ultimately leading to better outcomes and increased stakeholder satisfaction (G2, 2023).

3.1.2 Agile Principles

While Agile is defined by four core values, these values are further elaborated upon in the Twelve Principles of Agile Software Development (Beck et al., 2001). These principles provide a mindset and framework for Agile methodologies. These principles serve as a guide for Agile teams to effectively implement and embrace agility in their work. The twelve Agile principles are as follows:

1. Customer satisfaction through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development.
3. Deliver working software frequently, with a preference for shorter timescales.
4. Collaborate closely with customers and stakeholders throughout the project.
5. Build projects around motivated individuals and give them the environment and support they need.
6. The most efficient and effective method of conveying information is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity is essential.
11. Self-organizing teams make the best decisions.
12. Regularly reflect on how to become more effective and adjust behavior accordingly.

Agile principles provide a more focused framework on how to adjust practices to achieve the core values of Agile. For example, in Scrum, one of the widely used Agile frameworks, the principles guide the iterative and incremental approach to software development. It emphasizes the importance of time-boxed iterations called sprints, where working software is delivered frequently. The principles also emphasize the collaboration between the Scrum team, stakeholders, and the customer throughout the project to ensure continuous feedback and alignment (Schwaber & Sutherland, 2020).

Forth Chapter

4.1 Construction Industry:

The construction industry is an incredibly vast and intricate field that encompasses a wide array of projects, ranging from modest residential homes to expansive commercial structures and infrastructure developments. It holds significant importance as a key employer in numerous countries, playing a crucial role in driving economic growth. Construction projects are characterized as being complex, involving various stakeholders, and involving uncertainty. The success of construction projects relies on multiple factors. Such factors include good planning and design, availability of resources, and achieving project desirable outcome and delivery.

4.1.1 Project management in construction projects:

Project management plays a crucial role in construction projects. Traditional project management in construction projects involves a systematic approach that includes initiating, planning, executing, monitoring, and controlling. It involves various aspects, including defining project objectives, identifying stakeholders, allocating resources, managing risks, and ensuring quality control (PMBOK Guide, 6th edition).

Regardless, traditional project management faces significant challenges in the dynamic construction industry. Construction projects often face uncertainties, such as changing client requirements and unforeseen site conditions. These uncertainties can have a profound impact on project scope, schedule, and budget, making it challenging to successfully implement initial plans and projections (Abdul-Rahman et al., 2019).

Another challenge lies in the collaborative nature of construction projects between involving parties. Construction projects typically involve diverse teams of professionals and teams. Effective communication, collaboration, and coordination among these stakeholders are crucial for project success. However, traditional project management approaches struggle to facilitate good communication channels, resolve conflicts, and align the efforts of different teams towards project goals (Wang et al., 2016).

4.1.2 Agile project management in construction project:

In response to the unique challenges faced by the construction industry, there has been a notable shift towards implementing Agile Project Management (APM) approaches in construction projects worldwide. According to the PMI 2021 Pulse Report, the adoption of agile project

management in construction organizations has increased from 19% in 2020 to 28% in 2021, indicating its growing popularity and effectiveness (PMI, 2021).

The benefits of agile project management in construction have been highlighted in various studies and publications. A report published by the Agile Alliance in 2019 emphasized the positive outcomes of agile project management in construction, including improved communication, collaboration, risk reduction, efficiency, productivity, and customer satisfaction. This report cited several case studies that demonstrated the successful implementation of agile project management methodologies (Agile Alliance, 2019).

A case study conducted by Al-Hamdani and Al-Tamimi (2022) in Iraq examined the use of agile project management in a construction project. The study found that agile project management facilitated enhanced communication and collaboration between the project team and the client. The ability to make changes to the project plan as needed ensured timely completion within budgetary constraints, indicating the effectiveness of agile project management in the Iraqi construction context (Al-Hamdani & Al-Tamimi, 2022).

Similarly, a case study conducted by Gomes and Martins (2010) on a Portuguese construction SME that had never used agile methods before found that the adoption of agile methods improved communication, collaboration, and client feedback frequency, resulting in a reduced time to market for their product. The agile approach proved advantageous over traditional project management methods, enabling the company to release their product six months earlier than anticipated (Gomes & Martins, 2010).

Another noteworthy case study, conducted by Giri and Gunasekaran (2022), examined a construction company that successfully adopted agile project management. The study highlighted the importance of fostering a culture of collaboration and trust within the organization, coupled with adequate training and resource allocation to support the agile project management implementation (Giri & Gunasekaran, 2022).

Additionally, a case study conducted by Awad and Elsheikh (2019) investigated a construction company in Sudan that adopted agile project management methods. Their case study demonstrated that APM led to improved communication, collaboration, and a reduction in the risks of delays and cost overruns (Awad & Elsheikh, 2019).

Furthermore, a survey conducted by Shrestha and Adhikari (2022) involving 100 construction professionals in Nepal explored the influence of agile leadership on project success. The findings indicated that agile leadership had a positive impact on project success, further emphasizing the

potential benefits of adopting agile project management methodologies in construction (Shrestha & Adhikari, 2022).

These studies and reports provide valuable insights into the advantages of agile project management in construction, including improved communication, collaboration, risk reduction, efficiency, and client satisfaction. The growing adoption of agile project management in the construction industry indicates its potential to address the specific challenges faced by construction projects and enhance overall project outcomes (Al-Hamdani & Al-Tamimi, 2022; Gomes & Martins, 2010; Giri & Gunasekaran, 2022; Awad & Elsheikh, 2019; Shrestha & Adhikari, 2022).

Fifth Chapter

5.1 Methodology:

The study will utilize 3-step approach utilizing qualitative data collation methods:

Literature Review: which include a comprehensive review of academic literature related to the research topic conducted in Saudi Arabia. The review will target studies that used surveys or interviews to identify the current state of APM in Construction industry in Saudi Arabia, including their findings, which will serve as the foundation for this research.

Data Collection: by disputing questioners to participants in the construction industry in Saudi Arabia. The questioners aim to assess participants incorporation of agile values and principles in the industry. The questioners will use Likert scale to assess participants response.

Consolidation: by collecting data from the questioners respond by participants and transforming it into useful information that can be used to draw a conclusion.

5.1.1 Literature Review:

The literature review was conducted by searching keywords related to the research topic, including "construction," "agile," and "Saudi Arabia." These keywords were utilized in a comprehensive search across multiple academic databases, such as Google Scholar, EBSCO,

PsycINFO, Scopus, Emerald Insight, Taylor & Francis Online, ProQuest, IEEE Xplore, Wiley Online Library, ScienceDirect, and SpringerLink. Despite the extensive search, the research yielded no relevant results or literature on the specific intersection of construction, agile methodologies, and Saudi Arabia.

However, the research effort also involved gathering valuable insights from studies conducted in other countries, which can help bridge the geographical gap in academic literature pertaining to the application of agile methodologies in the construction industry. By considering and adapting these insights, the knowledge and best practices from other contexts can be utilized to enhance the understanding and implementation of agile approaches in the construction sector of Saudi Arabia.

5.1.2 Data Collection:

The study utilized a questionnaire adapted from a relevant article titled "Examining the Values and Principles of Agile Construction Management in Iraqi Construction Projects" (Author, Year), published in the Journal of Engineering. The questionnaire was translated into Arabic by an authorized translation office to ensure accurate comprehension because the study society native language is Arabic (attached in the Appendixes after page 31), and it was subsequently made and distributed to participants through google forms software. The research successfully collected responses from 412 participants representing the construction industry across all regions of Saudi Arabia. The questioner was divided into 3 sections which include section A: demographic characteristics (**Table # 1**), section B: close ended questions related to the topic which devise into 2 clauses; clause A focuses on agile values (**Table # 4**) and clause B focuses on agile principles (**Table # 6**). Section C included open-ended questions related to participants' opinions.

5.1.3 Consolidation:

For analysis of collected data, the research utilized the Google Forms analytical tool to examine participants' responses to the questions. The tool allowed for determining both the number of responses and their percentage relative to the total. Additionally, Microsoft Excel was employed to calculate the arithmetic mean. Each question was assigned a score ranging from 1 to 5 to assess the effect of a value or principle on the construction industry in Saudi Arabia.

5.1.3.1 Section A: Demographic Characteristics

The purpose of this section is to gather information about the demographic characteristics of the questionnaire participants. Among the participants, 85.9% were male, while 14.1% were female. The age distribution of the participants was as follows: 31.8% were between 30 to 39 years old, 31.8% were 50 years and older, and 8% were between 25 to 29 years old. In terms of experience, 38.1% of the participants had more than 20 years of experience, while 11.7% had less than 5 years' experience. Geographically, 52.1% of the participants were from the eastern region, whereas only 2.7% were from the northern region.

Gender?	Male	354 / 85.9 %	ذكر	الجنس ؟
	Female	58 / 14.1 %	أنثى	
Age?	From 25 to 29	33 / 8 %	من 25 إلى 29	العمر ؟
	From 30 to 39	131 / 31.8 %	من 30 إلى 39	
	From 40 to 49	117 / 28.4 %	من 40 إلى 49	
	50 years and more	131 / 31.8 %	50 سنة وأكثر	
Years of Experience?	Less than 5 years	48 / 11.7 %	أقل من 5 سنوات	عدد سنوات الخبرة؟
	From 5 to 10 years	57 / 13.8 %	من 5 إلى 10 سنوات	
	From 11 to 15 years	88 / 21.4 %	من 11 إلى 15 سنة	
	From 16 to 20 years	62 / 15 %	من 16 إلى 20 سنة	
	More than 20 years	157 / 38.1 %	أكثر من 20 سنة	
In which region you are working in construction filed in KSA?	Western Region	75 / 18.2 %	المنطقة الغربية	في أي منطقة تعمل في مجال التشييد والإنشاء في المملكة العربية السعودية ؟
	Central Region	99 / 24.1 %	المنطقة الوسطى	
	Eastern Region	214 / 52.1 %	المنطقة الشرقية	
	Northern Region	11 / 2.7 %	المنطقة الشمالية	
	Southern Region	13 / 2.9 %	المنطقة الجنوبية	

Table # 1: Section A (Demographic Characteristics - Filed results)

5.1.3.2 Section B (Clause A: Agile Values)

Clause A of section B consists of 7 questions related to agile values. The questions focus on the level of agreement or disagreement participants have for a given question. Each question is formulated to incorporate a value contribution to related construction projects processes or tools. The aim of this section is to collect participants responses to evaluate the incorporation of agile values in current construction practices in Saudi Arabia.

Through analysis of the participants responds, it was found that value 1 (Individuals and interactions over processes and tools), value 2 (Working Software over Comprehensive Documentation), and value 4 (Responding to Change over Following a plan) have a **very high** effect in the construction industry in Saudi Arabia. While value 3 (Customer Collaboration over Contract Negotiation) has a **high** effect.

Item No.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Effect Level
	5	4	3	2	1		
Value no.1: Individuals and interactions over processes and tools							
AAV1.1	179	174	34	12	13	4.20	High
AAV1.2	192	182	30	4	4	4.34	Very High
Value no.2: Working Software over Comprehensive Documentation							
AAV2.1	230	150	25	2	5	4.45	Very High
AAV2.2	232	134	38	8	0	4.43	Very High
Value no.3: Customer Collaboration over Contract Negotiation							
AAV3.1	105	179	71	44	13	3.77	High
AAV3.2	167	190	40	12	3	4.23	Very High
Value no.4: Responding to Change over Following a Plan							
AAV4.1	174	191	36	8	3	4.27	Very High

Table # 2: Section B (Section A: Agile Values - The analyzed participants' responses to the questions by the arithmetic mean)

5.1.3.2 Section B (Section B: Agile Principles)

Clause B of section B consists of 18 questions related to agile principles. The questions focus on the level of agreement or disagreement participants have for a given question. Each question is formulated to incorporate a principal contribution to related construction projects processes or tools. The aim of this section is to collect participants responses to evaluate the incorporation of agile principals in current construction practices in Saudi Arabia.

Through analysis of the participants responds, it was found that Principles no. 4, 7, 8, 9, 11, and 12 have a **very high** effect in the construction industry in Saudi Arabia. While Principles no. 1, 2, 3, 5, 6, and 10 have a **high** effect.

Item No.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Effect Level
	5	4	3	2	1		
Principle No.1: Our highest priority is to satisfy the customer through the early and continuous delivery of valuable software							
BAP1.1	169	184	39	15	5	4.21	Very High
BAP1.2	122	201	66	20	3	4.02	High
BAP1.3	175	185	35	11	6	4.24	Very High
Principle No.2: Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage							
BAP2.1	146	179	45	33	9	4.02	High
BAP2.2	162	188	40	15	7	4.17	High
Principle No.3: Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale							
BAP3.1	160	191	48	9	4	4.20	High
Principle No.4: Business people and developers must work together daily throughout the project							
BAP4.1	193	149	40	20	10	4.20	High
BAP4.2	199	153	38	16	6	4.27	Very High
Principle No.5: Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done							
BAP5.1	141	188	62	15	6	4.08	High
Principle No.6: The most efficient and effective method of conveying information to and within a development team is a face-to-face conversation							
BAP6.1	172	169	32	28	11	4.12	High
Principle No.7: Working software is the primary measure of progress							
BAP7.1	163	204	40	5	0	4.27	Very High
Principle No.8: Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely							
BAP8.1	161	200	45	5	1	4.25	Very High
Principle No.9: Continuous attention to technical excellence and good design enhances agility							
BAP9.1	163	199	37	12	1	4.24	Very High
Principle No.10: Simplicity "the art of maximizing the amount of work not done" is essential							
BAP10.1	126	154	80	36	16	3.82	High
Principle No.11: The best architectures, requirements, and designs emerge from self-organizing teams							
BAP11.1	165	202	33	8	4	4.25	Very High
Principle No.12: At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly							
BAP12.1	194	179	28	9	2	4.34	Very High
BAP12.2	208	171	25	6	2	4.40	Very High
BAP12.3	180	185	38	9	0	4.30	Very High

Table # 3: Section B (Section B: Agile Principles – The analyzed participants' responses to the questions by the arithmetic mean)

3.1.3.2 Section C (Open-ended Questions)

The purpose of this section was to provide the participants with an opportunity to contribute to the study by sharing their opinions and suggestions for improvement. This was done by asking two comprehensive questions:

C1) Please provide any other comments regarding this study.

C2) Please provide any comments regarding any aspect that appears to be lacking in this study.

The participants' answers to the questions are provided in the appendix in Table # 8.

Sixth Chapter

6.1 Conclusion and Recommendations:

Based on the findings presented in Section B, Clause A, and Section B, Clause B, it can be concluded that Agile values and principles have a significant impact on the construction industry in Saudi Arabia, ranging from high to very high. This suggests that the industry and its workforce are influenced by the Agile trend. The results further indicate that all Agile values and principles are effectively integrated into construction practices in Saudi Arabia, demonstrating a high to very high level of impact. These findings suggest that the application of Agile practices in the construction industry in Saudi Arabia is feasible. Notably, the feedback received from participants highlights the importance of valuing experience in Agile Project Management (APM) to successfully implement an Agile framework in the construction field, with a particular emphasis on teamwork and collaboration.

This study recommends that other researchers explore Agile frameworks and practices that are specifically tailored to the construction industry. Additionally, it is recommended to raise awareness among all stakeholders about Agile Project Management and its potential benefits to the industry through various channels. Furthermore, the support of the government and relevant parties is crucial in promoting the adoption of Agile project management in the construction industry in Saudi Arabia

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Appendixes:

The following set of statements measures the influence of Agile trends in the Construction Projects in KSA. Please mark according to your level of agreement.					تقاس مجموعة البيانات التالية تأثير التوجهات الرشيقية على المشاريع الانشائية في المملكة العربية السعودية. يرجى وضع العلامة بناءً على مستوى الموافقة الخاصة بك				
Item No.	Section A: Agile Values	5	4	3	2	1	القسم A: القيم الرشيقية	رقم البند	
		موافق بشدة Strongly Agree	موافق Agree	محايد Neutral	غير موافق Disagree	غير موافق بشدة Strongly Disagree			
No.1 Value	Individuals and interactions over processes and tools	الأفراد والتفاعلات على العمليات والأدوات					القيمة رقم 1		
AAV1.1	Do you agree with that focusing on the importance of the engineering staff and staff working on the construction project and their interactions and enable them to perform their work and encourage them to work collectively, will lead to help to succeed the tasks of project management and reduce delay more than focusing on items of work and tools only?	179 43.4%	174 42.2%	34 8.3%	12 2.9%	13 3.2%	هل توافق على تركيز أهمية عمل المهندسين والموظفين في مشروع البناء وتفاعلاتهم وتمكينهم من أداء عملهم وتشجيعهم على العمل الجماعي، سيؤدي إلى المساعدة على إنجاح مهام إدارة المشاريع وتقليل التأخير أكثر من التركيز على بنود العمل والأدوات فقط؟	AAV1.1	
AAV1.2	Do you agree that processes and tools are developed to increase and facilitate interaction between project workers to accomplish their work, not to replace them?	192 46.6%	182 44.2%	30 7.2%	4 1%	4 1%	هل توافق على أن يتم تطوير العمليات والأدوات لزيادة وتسهيل التفاعل بين العاملين في المشروع لإنجاز عملهم وليس لاستبدالهم؟	AAV1.2	
Value No.2	Working Software over Comprehensive Documentation	برمجيات العمل على التوثيق الشامل					القيمة رقم 2		
AAV2.1	Do you agree that the use of modern software in project management, electronic documentation, build a database, etc. will lead to help for making the smart and correct decisions at fast by the construction project manager?	230 55.8%	150 36.4%	25 6.1%	2 0.5%	5 1.2%	هل توافق على أن استخدام البرمجيات الحديثة في إدارة المشاريع، والتوثيق الإلكتروني، وبناء قاعدة بيانات، وما إلى ذلك، سيؤدي إلى المساعدة في اتخاذ القرارات الذكية والصحيحة بسرعة من قبل مدير مشروع البناء؟	AAV2.1	
AAV2.2	Do you agree that electronic documentation of the data of construction project is better than the manual documentation (traditional)?	232 56.4%	134 32.5%	38 9.2%	8 1.9%	0 0%	هل توافق على أن التوثيق الإلكتروني لبيانات مشروع التشييد أفضل من التوثيق اليدوي (التقليدي)؟	AAV2.2	
Value No.3	Customer Collaboration over Contract Negotiation	تعاون العميل على تفاوض العقود					القيمة رقم 3		
AAV3.1	Do you agree that follow an administrative approach depends on the completion of the basic requirements only in the contracting stage and developing the required details with the project progress, will lead to help for completing the project within specified time and cost when compared with the traditional approach?	105 25.5%	179 43.4%	71 17.2%	44 10.7%	13 3.2%	هل توافق على أن اتباع نهج إداري يعتمد على إكمال المتطلبات الأساسية فقط في مرحلة التعاقد ووضع التفاصيل المطلوبة مع تقدم المشروع، سيؤدي إلى المساعدة في إكمال المشروع في غضون وقت وتكلفة محددين عند مقارنته بالنهج التقليدي؟	AAV3.1	
AAV3.2	Do you agree that the use of an administrative approach based on the spirit of trust and partnership between the project team and its beneficiaries, will lead to ensuring the success of the construction project?	167 40.5%	190 46.1%	40 9.7%	12 2.9%	3 0.7%	هل توافق على أن استخدام نهج إداري مبني على روح الثقة والشراكة بين فريق المشروع والمستفيدين منه سيؤدي إلى ضمان نجاح مشروع البناء؟	AAV3.2	
Value No.4	Responding to Change over Following a Plan	الاستجابة للتغيير على اتباع خطة					القيمة رقم 4		
AAV4.1	Do you agree that follow an approach responds to changes during the construction project execution by making flexible alternative plans, which are pre-agreed to deal	174	191	36	8	3	هل توافق على أن اتباع نهج مستجيب للتغيرات أثناء تنفيذ مشروع البناء من خلال وضع خطط بديلة مرنة يتم الاتفاق عليها	AAV4.1	

	with these changes, for ensuring the project's success?	42.2 %	46.4 %	8.7 %	1.9 %	0.7 %	مسبقًا للتعامل مع هذه التغييرات لضمان نجاح المشروع؟	
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Table # 4: Section B (Section A: Agile Values - The analyzed participants' responses to the questions in terms of both the number and percentage)

	Agile Values				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Value No.1 - Q1	43.4%	42.2%	8.30%	2.9%	3.2%
Value No.1 - Q2	46.6%	44.2%	7.20%	1.0%	1.0%
Value No.2 - Q1	55.8%	36.4%	6.10%	0.5%	1.2%
Value No.2 - Q2	56.4%	32.5%	9.20%	1.9%	0.0%
Value No.3 - Q1	25.5%	43.4%	17.20%	10.7%	3.2%
Value No.3 - Q2	40.5%	46.1%	9.70%	2.9%	0.7%
Value No.4 - Q1	42.2%	46.4%	8.70%	1.9%	0.7%

Table # 5: Section B (Summary of Section A: Agile Values - Final filed results)

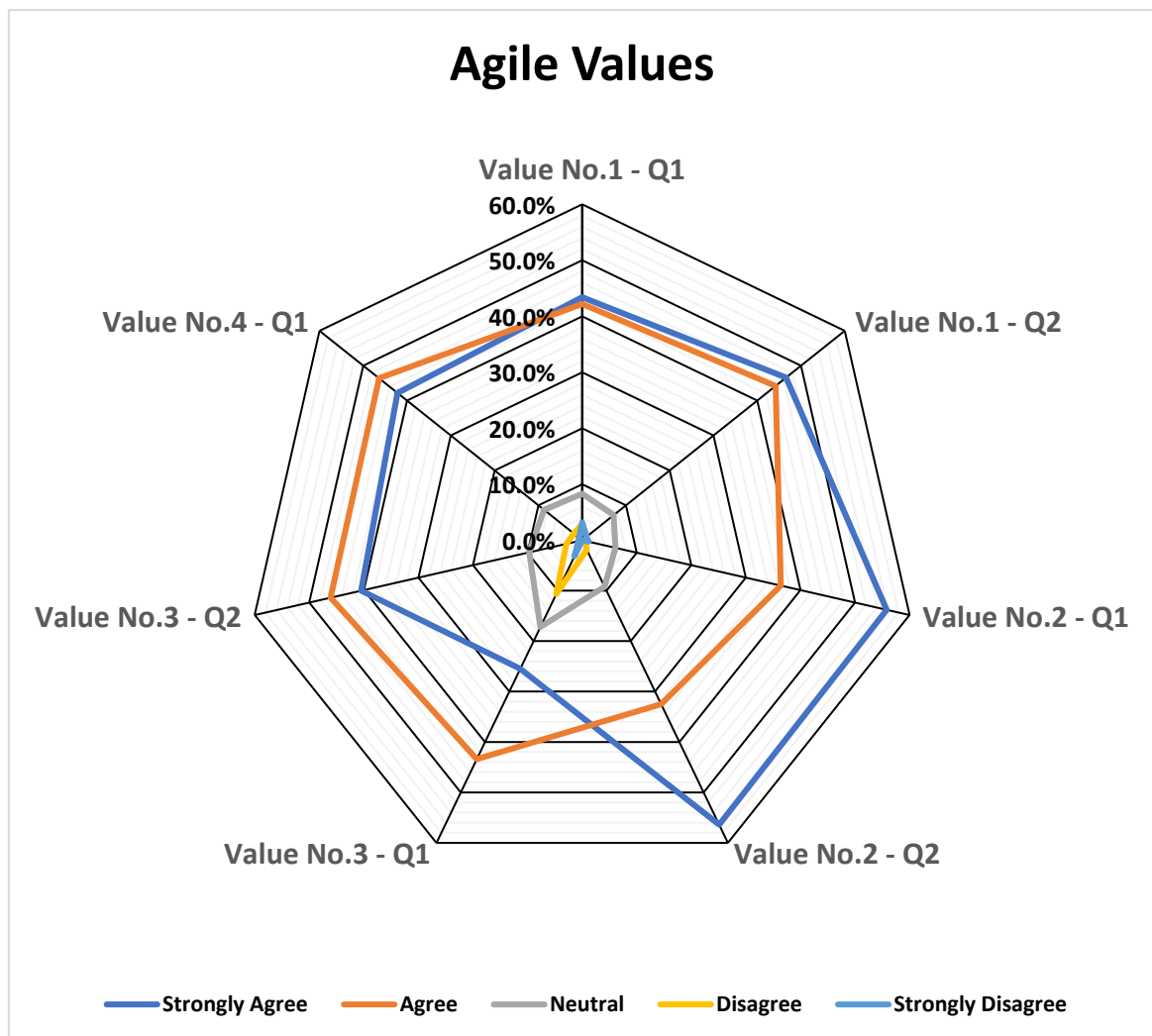


Figure # 1: Radar chart for Section B (Section A: Agile Values - Final filed results)

Item No.	Section B: Agile Principles	5	4	3	2	1	المبادئ الرشيقية B القسم	رقم البند
		موافق بشدة Strongly Agree	موافق Agree	محايد Neutral	غير موافق Disagree	غير موافق بشدة Strongly Disagree		
Principle No.1	أولويتنا القصوى هي إرضاء العميل من خلال التسليم المبكر والمستمر للبرمجيات القيمة Our highest priority is to satisfy the customer through the early and continuous delivery of valuable software							المبدأ رقم 1
BAP1.1	Is the conducting the necessary modifications and changes required, by the contractor prior to the delivery phase are possible and less damage than doing it after the delivery stage?	169 41 %	184 44.7 %	39 9.5 %	15 3.6 %	5 1.2 %	هل إجراء التعديلات والتغييرات اللازمة من جانب المقاول قبل مرحلة التسليم ممكنة وأقل ضرراً من القيام بذلك بعد مرحلة التسليم؟	BAP1.1
BAP1.2	Is the employer's satisfaction having the priority at the main parties of the construction project and impact on the success of the construction project?	122 29.6 %	201 48.8 %	66 16 %	20 4.9 %	3 0.7 %	هل يحظى رضى صاحب العمل بالأولوية في الأطراف الرئيسية لمشروع البناء وتأثيره على نجاح مشروع البناء؟	BAP1.2
BAP1.3	Is the delivery of the construction project in the form of stages, gives the beneficiary and the contractor the opportunity to test the success of the project before the final delivery stage?	175 42.5 %	185 44.9 %	35 8.5 %	11 2.7 %	6 1.5 %	هل تسليم مشروع التشييد على شكل مراحل، يتيح للمستفيد والمقاول فرصة اختبار نجاح المشروع قبل مرحلة التسليم النهائية؟	BAP1.3
Principle No.2	نرحب بتغيير المتطلبات، حتى في وقت متأخر من التطوير. تسخر العمليات الرشيقية التغيير من أجل الميزة التنافسية للعميل Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage							المبدأ رقم 2
BAP2.1	Is the existence of a flexible design so that changes can be made during the execution phase of the construction projects, affects the success of the construction project?	146 35.4 %	179 43.4 %	45 10.9 %	33 8 %	9 2.2 %	هل يؤثر وجود تصميم مرن بحيث يمكن إجراء التغييرات أثناء مرحلة تنفيذ مشاريع التشييد على نجاح المشروع؟	BAP2.1
BAP2.2	Is develop a pre-agreed plan (between the contractor and the employer) on how to make the necessary changes required during the execution phase, affects the success of the construction project?	162 39.3 %	188 45.6 %	40 9.7 %	15 3.6 %	7 1.7 %	هل يؤثر وضع خطة متفق عليها مسبقا (بين المقاول وصاحب العمل) بشأن كيفية إجراء التغييرات اللازمة خلال مرحلة التنفيذ، على نجاح مشروع التشييد؟	BAP2.2
Principle No.3	تقديم برامج العمل بشكل متكرر، من أسبوعين إلى شهرين، مع تفضيل الجدول الزمني الأقصر Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale							المبدأ رقم 3
BAP3.1	Do you agree that dividing of the work activities of the project into repetitive processes and each process contains specific objectives and time, and all obstacles are discussed at the beginning of each process, will lead to accomplish the work very quickly and take advantage of the errors that occur in each process?	160 38.8 %	191 46.4 %	48 11.7 %	9 2.2 %	4 1 %	هل توافق على أن تقسيم أنشطة عمل المشروع إلى عمليات متكررة وتتضمن كل عملية أهدافاً ووقت محددين ومناقشة جميع العقبات في بداية كل عملية سيؤدي إلى إنجاز العمل بسرعة كبيرة والاستفادة من الأخطاء التي تحدث في كل عملية؟	BAP3.1

المبدأ رقم	يجب أن يعمل رجال الأعمال والمطورون معًا يوميًا طوال المشروع Business people and developers must work together daily throughout the project						Principle No.4
BAP4.1	هل توافق على أن التعاون بين الموظفين والإدارة العليا يؤثر على نجاح مهام إدارة المشروع في مشروع البناء؟	10	20	40	149	193	Do you agree that the cooperation between the employees and senior management, affects the success of the project management tasks in the construction project?
		2.4 %	4.9 %	9.7 %	36.2 %	46.8 %	
BAP4.2	هل توافق على أن إعطاء الموظف وصاحب العمل إحساسًا بالمسؤولية المشتركة لإنجاز المشروع يؤثر على نجاح مشروع البناء؟	6	16	38	153	199	Do you agree that to give both the employee and the employer a sense of joint responsibility for the completion of the project affect the success of the construction project?
		1.5 %	3.9 %	9.2 %	37.1 %	48.3 %	
المبدأ رقم	بناء مشاريع حول الأفراد المتحفزين ومنحهم البيئة والدعم الذي يحتاجون إليه والثقة بهم لإنجاز المهمة Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done						Principle No.5
BAP5.1	هل توافق على أن موافقة مدير المشروع على سياسة الإدارة تعتمد على دوافع الأفراد وتشجيعهم ومنحهم الثقة وعدم الضغط عليهم لإنجاز العمل المعين لهم في التواريخ المحددة مما سيؤدي إلى إنجاز هذه الأعمال بسرعة ودون تأخير؟	6	15	62	188	141	Do you agree that the approval of the project manager on the management policy depends on the motives of individuals and encourage them and give them confidence and not subject to pressure to complete the work assigned to them on the dates specified, leads to accomplishing these works quickly and without delay?
		1.5 %	3.6 %	15 %	45.6 %	34.2 %	
المبدأ رقم	الطريقة الأكثر كفاءة وفعالية لنقل المعلومات إلى فريق المشروع ودخله هي إجراء محادثة وجهاً لوجه The most efficient and effective method of conveying information to and within a project team is a face-to-face conversation						Principle No.6
BAP6.1	هل توافق على أن الاتصال المباشر بين أطراف مشروع البناء لإيصال المعلومات ومناقشة المشاكل يؤثر على نجاح مشروع البناء؟	11	28	32	169	172	Do you agree that the direct communication between the parties of the construction project to communicate the information and discuss the problems, affect the success of the construction project?
		2.7 %	6.8 %	7.8 %	41 %	41.7 %	
المبدأ رقم	برمجيات العمل هي المقياس الرئيسي للتقدم المحرز Working software is the primary measure of progress						Principle No.7
BAP7.1	هل توافق على أن برنامج عمل المشروع ينقسم إلى أجزاء من المهام لكل منها تعريف واضح لما هو مطلوب للعمل، ويساعد على اختبار وقياس تقدم المشروع وبالتالي يؤدي إلى نجاح المشروع البناء؟	0	5	40	204	163	Do you agree that the project work program is divided into parts of the tasks each of which has a clear definition of what is required to work, helps to test, and measure the progress of the project and thus lead to the success of the construction project?
		0 %	1.2 %	9.7 %	49.5 %	39.6 %	
المبدأ رقم	تعزز العمليات الرشيقية التنمية المستدامة. يجب أن يكون الرعاة والمطورون والمستخدمون قادرين على الحفاظ على وتيرة ثابتة إلى أجل غير مسمى Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely						Principle No.8
BAP8.1	هل توافق على أن تطبيق مبادئ الاستدامة في المشروع وتهيئة بيئة عمل مستدامة للعمال من حيث الجوانب البيئية والاجتماعية والاقتصادية يساعد على الحد من التغيرات والحوادث في المشروع وبالتالي يؤدي إلى نجاح مشروع البناء؟	1	5	45	200	161	Do you agree that applying the principles of sustainability in the project and creating a sustainable working environment for workers in terms of environmental, social, and economic aspects helps reduce the changes and accidents in the project and thus lead to the success of the construction project?
		0.2 %	1.3 %	10.9 %	48.5 %	39.1 %	

المبدأ رقم	الاهتمام المستمر بالتفوق التقني والتصميم الجيد يعزز الرشاقة Continuous attention to technical excellence and good design enhances agility						Principle No.9
BAP9.1	هل توافق على أن الاهتمام المستمر بالتميز التقني والتصميم الجيد يؤدي إلى تجنب إعادة العمل أو الإفراط في التصميم؟ (أي العمل بمستوى كاف من الاكتمال والجودة لتحقيق الغرض المقصود منه)	1	12	37	199	163	Do you agree that the continued attention to technical excellence and good design leads to avoid the rework or over-design? (i.e. work at an adequate level of completeness and quality to achieve its intended purpose)?
		0.2 %	2.9 %	9 %	48.3 %	39.6 %	
المبدأ رقم	البساطة - فن تعظيم حجم العمل الذي لم يتم إنجازه - أمر أساسي Simplicity—the art of maximizing the amount of work not done—is essential						Principle No.10
BAP10.1	هل توافق على أن البدء في مشروع بناء مبسط إلى حد ما (من حيث المتطلبات) ثم توسيعه إذا لزم الأمر، يحقق نجاح المشروع خلال الفترة المحددة بدلاً من البدء في مشروع تشييد معقد للغاية (متطلبات مفرطة)؟	16	36	80	154	126	Do you agree that starting a construction project is somewhat simplistic (in terms of requirements) and then expanded, if necessary, achieves the success of the project within the specified period instead of starting a construction project that is too complex (excessive requirements)?
		3.9 %	8.7 %	19.4 %	37.4 %	30.6 %	
المبدأ رقم	تظهر أفضل البنى والمتطلبات والتصاميم من فرق عمل ذاتية التنظيم The best architectures, requirements, and designs emerge from self-organizing teams						Principle No.11
BAP11.1	هل توافق على أن وجود فريق متعدد الوظائف والمهارات والكفاءات في مشروع البناء يتمتع بسلطة العمل الجماعي والتعاوني يساعد على إنجاز مشروع البناء خلال الفترة المحددة ويمنع التأخير عند مقارنته بالعمل الفردي؟	4	8	33	202	165	Do you agree that the presence of a multi-functional team and skills and competencies in the construction project with the authority to work collectively and in a cooperative way, helps to complete the construction project within the specified period and prevents the delay when compared to work individually?
		1 %	2 %	8 %	49 %	40 %	
المبدأ رقم	على فترات منتظمة، يفكر الفريق في كيفية أن يصبح أكثر فاعلية ثم يقوم بضبط سلوكه وتعديله وفقاً لذلك. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly						Principle No.12
BAP12.1	هل توافق على أن وضع خطط تدريبية لتحسين أداء الموظفين العاملين في مشروع البناء يساعد على نجاح مشروع البناء؟	2	9	28	179	194	Do you agree that the development of training plans to improve the performance of staff working in the construction project, helps to succeed the construction project?
		0.5 %	2.2 %	6.8 %	43.4 %	47.1 %	
BAP12.2	هل توافق على أن وجود خطة متكاملة لإدارة مخاطر من المتوقع حدوثها في مشروع التشييد سيساعد على نجاح مشروع التشييد؟	2	6	25	171	208	Do you agree that having an integrated risk management plan that is expected to occur in the construction project will help to success the construction project?
		0.5 %	1.5 %	6 %	41.5 %	50.5 %	
BAP12.3	هل توافق على أن تحديد فترات زمنية في مشروع البناء خلال كل فترة يمكن أن يؤدي إلى مراجعة عمليات المشروع واتخاذ إجراءات تصحيحية فورية عند الضرورة يساعد على نجاح مشروع البناء في الوقت والتكلفة والجودة المطلوبة؟	0	9	38	185	180	Do you agree that setting time periods in the construction project during each period can conduct a review of project operations and take prompt corrective actions, when necessary, helps the success of the construction project within the required time, cost, and quality?
		0 %	2.2 %	9.2 %	44.9 %	43.7 %	

Table # 6: Section B (Section B: Agile Principles – The analyzed participants' responses to the questions in terms of both the number and percentage)

Agile Principles					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Principle No.1 - Q1	41.0%	44.7%	9.50%	3.6%	1.2%
Principle No.1 - Q2	29.6%	48.8%	16.00%	4.9%	0.7%
Principle No.1 - Q3	42.5%	44.9%	8.50%	2.7%	1.5%
Principle No.2 - Q1	35.4%	43.4%	10.90%	8.0%	2.2%
Principle No.2 - Q2	39.3%	45.6%	9.70%	3.6%	1.7%
Principle No.3 - Q1	38.8%	46.4%	11.70%	2.2%	1.0%
Principle No.4 - Q1	46.8%	36.2%	9.70%	4.9%	2.4%
Principle No.4 - Q2	48.3%	37.1%	9.20%	3.9%	1.5%
Principle No.5 - Q1	34.2%	45.6%	15.00%	3.6%	1.5%
Principle No.6 - Q1	41.7%	41.0%	7.80%	6.8%	2.7%
Principle No.7 - Q1	39.6%	49.5%	9.70%	1.2%	0.0%
Principle No.8 - Q1	39.1%	48.5%	10.90%	1.3%	0.2%
Principle No.9 - Q1	39.6%	48.3%	9.00%	2.9%	0.2%
Principle No.10 - Q1	30.6%	37.4%	19.40%	8.7%	3.9%
Principle No.11 - Q1	40.0%	49.0%	8.00%	2.0%	1.0%
Principle No.12 - Q1	47.1%	43.4%	6.80%	2.2%	0.5%
Principle No.12 - Q2	50.5%	41.5%	6.00%	1.5%	0.5%
Principle No.12 - Q3	43.7%	44.9%	9.20%	2.2%	0.0%

Table # 7: Section B (Summary of Section B: Agile Principles - Final filed results)

Agile Principles

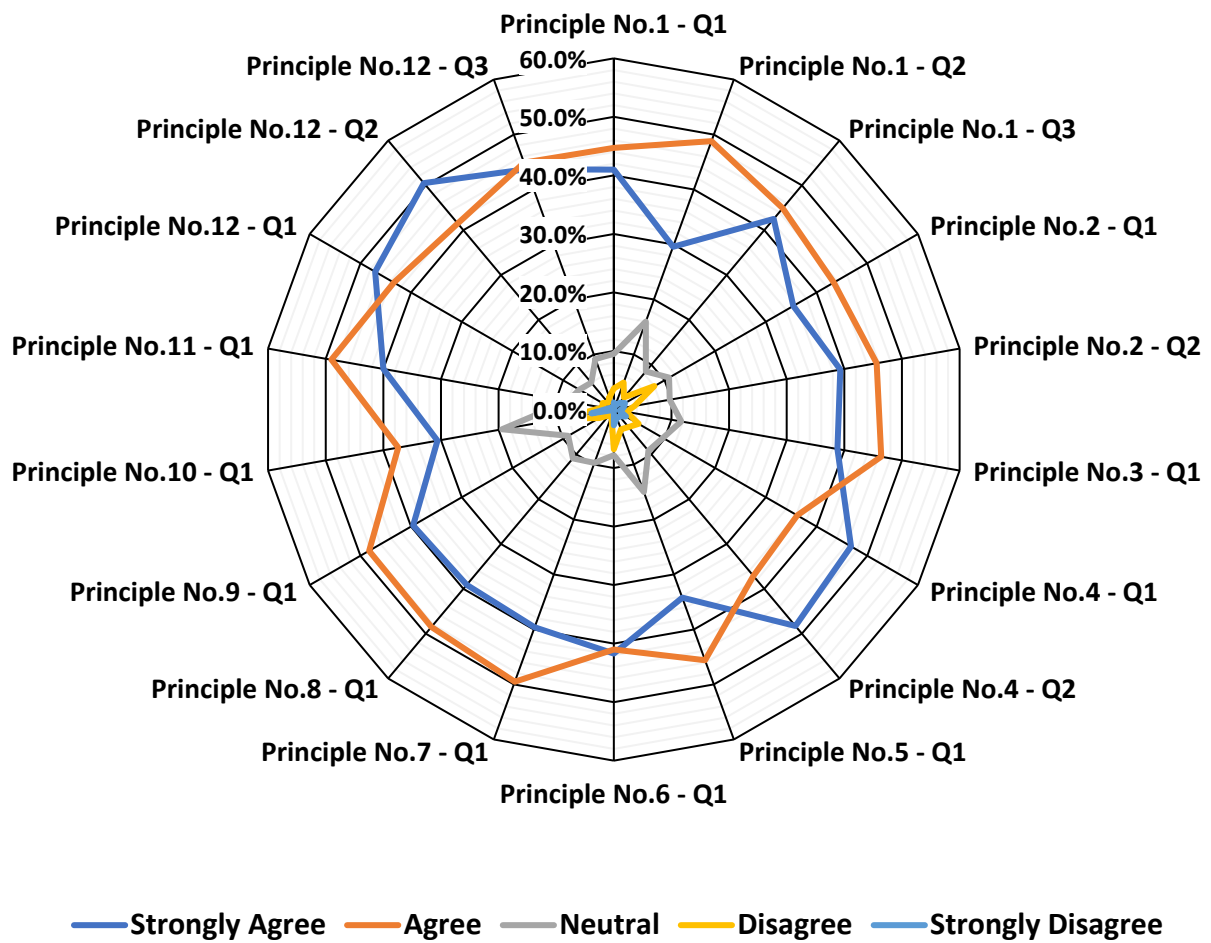


Figure # 2: Radar chart for Section B (Section B: Agile Principles – Final filed results)

Please provide any other comments regarding this study.	Please provide any comments regarding any aspect that appears to be lacking in this study.
Agile projects in the construction industry are somewhat difficult in our world because they are expensive in their changes and not like softWear projects change them only numbers and codes or like a single model prototype or mockups are changed	Questionnaire questions need to be read very accurately before answering but they are constructive
Working as a team is very beautiful, but the team has to have a leader walk it to have all the diligence in one mouth.	Improving the conditions of the work team plays a major role in the completion of the project with the required quality and timeliness No matter how well considered the project management plans are without attention to the team and their needs will not be met. 3. Attention to expertise and competencies and listening to their proposals helps to develop better plans for project completion Non-compensation for profit by achievement
Educational workshops and workshops	In fact, the aspect I would like to raise is present, but it has been listed without focusing on it too much. It is a very important aspect. It is one of the most important reasons why the team interacts effectively and contributes to the success of the projects, namely to motivate the team morally and materially with discretionary certificates on their dedication to work and financial incentives in kind that effectively increase the level of work performance and production. The objective of the enterprise is not to satisfy the client only, but to satisfy the employee is almost the same as to satisfy the client. Because it is actually the employee who translates the client's requirements into reality. Thank you for this beautiful and useful study.
The most important achievement of projects Team spirit	Status of disputes between Contracting Parties and early agreement on dispute resolution mechanisms
For any project to succeed, a complete timeline must be established. Two hundred weeks of achievement and decline each month	Imposing a single, centralized opinion is negative to the project's success. Giving participation to individuals in all transparency and places reflects on the success of projects and contributes to their smooth implementation
All practical and important points, but it is difficult to apply in our Arab world due to our nature.	A worker or employee must always be given a motivation to perform the work required of him properly and in a timely manner to perform it by taking the method of material or time equivalents such as a vacation day or two after the completion of work in a standard time. This in turn motivates the employee to finish the work assigned to him faster and in a standard time.

Applying a modern and flexible approach to project management is very important and essentially helps project success	The equivalent factor, which is crucial, is the equivalent of the staff member or employees, especially after the successful completion of each phase.
There is nothing to think about. All the questions are clear (integrated plans - collective work - a careful study - an integrated task force).	Study the difficulties of change in construction projects and their impact on the value and time of the project
An important way to make projects work is to create a good working environment in terms of dealing well with employees and giving them their rights first.	
Agile governance must be integrated with traditional management in a professional manner as many of the principles of agile governance cannot be fully applied in construction projects. I believe that the development of some principles of traditional method in line with agile and flexible management is the most suitable for construction projects.	
In the field of construction, the most important element to be seen is not to consider the time of the employee's attendance and separation to work as a basis. There must be a million working times and to consider the outcome as a basis for the employee's evaluation. If the management dealt with the employee by achievement and evaluation accordingly, the employee will be given greater productivity and will become more active by accomplishing his duties.	
Honesty, mastery and cooperation between the parties lead to excellent project success	
Sound scientific management, confidence building, review and correction of work where necessary from the requirements for success of large projects	
Study the project and the terms of the contract in terms of the requirements and the desire of the customer through what is offered in the market very helps in the completion of the project with the work of his study for the duration of the completion of the project during the monthly reports to help to understand the obstacles and ways of their condition and build that you can commit to the time period of the project Development of the project's staff in terms of courses, arranging the seriousness of the work and following the plan of study of the project and the work of establishing monthly, daily and weekly reports.	
An excellent and important study, especially at the moment, especially with the rapid development and the desire to achieve achievements in a shorter time, many companies tend to apply the principles of agile management in the execution of construction projects, but this application	

faces many challenges, risks and obstacles that need to study the durability and accurate analysis to achieve the effectiveness of the agile methodology and not to turn into a problem that leads to its failure.	
Changes in the construction project have a high financial cost and difficulty in changing as what has been created cannot be changed	
Despite the applicability of most of the values and principles of good governance to the project, some of them can never be applied as simple as making the task team lead the project without a firm and decision-making manager.	
Most of the values and principles of good governance may meet him or her and even give enthusiasm and motivation to work with them in construction projects, but it is difficult to apply them for several reasons: Lack of experience in the use of an agile mindset 2. The cost of the change is very high and can reach the cancellation of what was implemented in the early stages and full re-work. So it's hard to have flexibility in change. 3. Agile mindset depends on management and teamwork. This is difficult in construction projects because there are usually different disciplines such as civil, mechanical, electrical and architectural (Civilian and architectural may sometimes have some compatibility with some links between specialists) But both mechanics and electricity are world alone and it is difficult, for example, to give civilian and architectural opinion with electricity and mechanics and vice versa. It is therefore a condition of teamwork that the team is multi-talented and understands each other's specialization so that the ease of action and collective decision-making can take place here.	

Table # 8: Section C (The participants' answers to the Open-ended Questions)

أثر التوجهات الرشيقة على المشاريع الإنشائية في المملكة العربية السعودية

إعداد الطلاب/

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عبد الملك هشام بن مليح – 221000546

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د. وليد صديق

العام الدراسي:

2023

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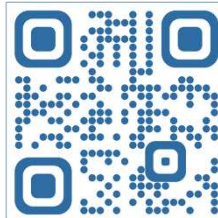
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بحث على
أثر التوجهات الرشيقة على المشاريع الإنشائية في المملكة العربية
السعودية

RESERCH ON
The influence of Agile trends in the Construction
Projects in KSA

كتيب استبيان

الإعداد:

تيسير عمار تيسير أحمد – 221002434
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أعزاءنا المستفتين الكرام:

السلام عليكم ورحمة الله وبركاته

نفيدكم بأننا طلاب في جامعة ميدأوشن (Midocean University) – كلية إدارة الأعمال
– تخصص إدارة المشاريع، نقوم ببحث تحت عنوان: أثر التوجهات الرشيدة على المشاريع
الإنشائية في المملكة العربية السعودية

نرجو التكرم بدقائق من وقتكم الثمين للإجابة على هذا الاستبيان، ونؤكد أن إجاباتكم ستكون
موضع الاهتمام والتقدير وستعامل بسرية تامة ولن تستخدم إلا لغرض البحث العلمي، وعليه نرجو
أن تكون إجاباتكم مماثلة للواقع بقدر الإمكان حتى يساهم ذلك في الوصول إلى نتائج دقيقة.

وتقبلوا خالص الشكر والاحترام؛

هخواكم الطلاب / الباحثين

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الإشراف د. وليد صديق



Dear Respondents,

We would like to inform you that we are students at Midocean University - Business Administrative Collage - Project Management Specialty, and we do research under the title: **The influence of Agile trends in the Construction Projects in KSA**

Kindly, we request a minutes of your valuable time to answer this questionnaire. We confirm that your response will be interesting and appreciated. It will be treated with complete confidentiality and will only be used for the purpose of scientific research. Therefore, we hope that your response will be as real as possible so that this will contribute to achieving accurate results.

Sincerely yours

Your Brothers Students/Researchers

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Midocean University



Section A:**قسم A:**

A: الخصائص الديموغرافية

A: Demographic Characteristics

للخيار المناسب (✓) الرجاء وضع علامة

Please tick (✓) the appropriate choice

Gender?	Male	354 / 85.9 %	ذكر	الجنس ؟
	Female	58 / 14.1 %	أنثى	
Age?	From 25 to 29	33 / 8 %	من 25 الى 29	العمر ؟
	From 30 to 39	131 / 31.8 %	من 30 الى 39	
	From 40 to 49	117 / 28.4 %	من 40 الى 49	
	50 years and more	131 / 31.8 %	50 سنة وأكثر	
Years of Experience?	Less than 5 years	48 / 11.7 %	أقل من 5 سنوات	عدد سنوات الخبرة؟
	From 5 to 10 years	57 / 13.8 %	من 5 الى 10 سنوات	
	From 11 to 15 years	88 / 21.4 %	من 11 الى 15 سنة	
	From 16 to 20 years	62 / 15%	من 16 الى 20 سنة	
	More than 20 years	157 / 38.1 %	أكثر من 20 سنة	
In which region you are working in construction filed in KSA?	Western Region	75 / 18.2 %	المنطقة الغربية	في أي منطقة تعمل في مجال التشييد والإنشاء في المملكة العربية السعودية؟
	Central Region	99 / 24.1 %	المنطقة الوسطى	
	Eastern Region	214 / 52.1 %	المنطقة الشرقية	
	Northern Region	11 / 2.7 %	المنطقة الشمالية	
	Southern Region	13 / 2.9 %	المنطقة الجنوبية	



قسم B:

Section B:

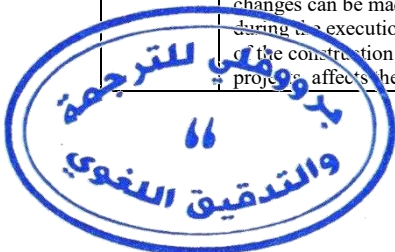
يرجى الإشارة إلى موافقتك أو عدم موافقتك على البيان التالي بوضع علامة (✓) للخيار الذي يعكس رأيك عن طريق اختيار أحد البدائل الخمسة.

Please indicate your degree of agreement or disagreement with the following statements, so please sign (✓) for the choice that reflects your opinion by choosing one of the five alternatives.

The following set of statements measures the influence of Agile trends in the Construction Projects in KSA. Please mark according to your level of agreement.					تقيس مجموعة البيانات التالية تأثير التوجهات الرشيقية على المشاريع الانشائية في المملكة العربية السعودية. يرجى وضع العلامة بناءً على مستوى الموافقة الخاصة بك			
Item No.	Section A: Agile Value	5 موافق بشدة Strongly Agree	4 موافق Agree	3 محايد Neutral	2 غير موافق Disagree	1 بشدة غير موافق Strongly Disagree	القسم A: القيم الرشيقية	رقم البند
Value No.1	الأفراد والتفاعلات على العمليات والأدوات						القيمة رقم 1	
AAV1.1	Do you agree with that focusing on the importance of the engineering staff and staff working on the construction project and their interactions and enable them to perform their work and encourage them to work collectively, will lead to help to succeed the tasks of project management and reduce delay more than focusing on items of work and tools only?	179 43.4%	174 42.2%	34 8.3%	12 2.9%	13 3.2%	هل توافق على تركيز أهمية عمل المهندسين والموظفين في مشروع البناء وتفاعلاتهم وتمكينهم من أداء عملهم وتشجيعهم على العمل الجماعي، سيؤدي إلى المساعدة على إنجاز مهام إدارة المشاريع وتقليل التأخير أكثر من التركيز على بنود العمل والأدوات فقط؟	AAV1.1
AAV1.2	Do you agree that processes and tools are developed to increase and facilitate interaction between project workers to accomplish their work, not to replace them?	192 46.6%	182 44.2%	30 7.2%	4 1%	4 1%	هل توافق على أن يتم تطوير العمليات والأدوات لزيادة وتسهيل التفاعل بين العاملين في المشروع لإنجاز عملهم وليس لاستبدالهم؟	AAV1.2
Value No.2	برمجيات العمل على التوثيق الشامل over Comprehensive Documentation						القيمة رقم 2	
AAV2.1	Do you agree that the use of modern software in project management, electronic documentation, build a database, etc. will lead to help for making the smart and correct decisions at fast by the construction project manager?	230 55.8%	150 36.4%	25 6.1%	2 0.5%	5 1.2%	هل توافق على أن استخدام البرمجيات الحديثة في إدارة المشاريع، والتوثيق الإلكتروني، وبناء قاعدة بيانات، وما إلى ذلك، سيؤدي إلى المساعدة في اتخاذ القرارات الذكية والصحيحة بسرعة من قبل مدير مشروع البناء؟	AAV2.1
AAV2.2	Do you agree that electronic documentation of the data of construction project is better than the manual documentation (traditional)?	232 56.4%	134 32.5%	38 9.2%	8 1.9%	0 0%	هل توافق على أن التوثيق الإلكتروني لبيانات مشروع التشييد أفضل من التوثيق اليدوي (التقليدي)؟	AAV2.2
Value No.3	تعاون العميل على تفاوض العقود Collaboration over Contract Negotiation						القيمة رقم 3	
AAV3.1	Do you agree that follow an administrative approach depends on the completion of the basic requirements	105	179	71	44	13	هل توافق على أن اتباع نهج إداري يعتمد على إكمال المتطلبات الأساسية فقط في مرحلة التعاقد ووضع التفاصيل المطلوبة مع تقدم	AAV3.1

	only in the contracting stage and developing the required details with the project progress, will lead to help for completing the project within specified time and cost when compared with the traditional approach?	25.5%	43.4%	17.2%	10.7%	3.2 %	المشروع، سيؤدي إلى المساعدة في إكمال المشروع في غضون وقت وتكلفة محددين عند مقارنته بالنهج التقليدي؟	
AAV3.2	Do you agree that the use of an administrative approach based on the spirit of trust and partnership between the project team and its beneficiaries, will lead to ensuring the success of the construction project?	167 40.5 %	190 46.1 %	40 9.7 %	12 2.9 %	3 0.7 %	هل توافق على أن استخدام نهج إداري مبني على روح الثقة والشراكة بين فريق المشروع والمستفيدين منه سيؤدي إلى ضمان نجاح مشروع البناء؟	AAV3.2
Value No.4	الاستجابة للتغيير على اتباع خطة Responding to Change over Following a Plan							القيمة رقم 4
AAV4.1	Do you agree that follow an approach responds to changes during the construction project execution by making flexible alternative plans, which are pre-agreed to deal with these changes, for ensuring the project's success?	174 42.2 %	191 46.4 %	36 8.7 %	8 1.9 %	3 0.7 %	هل توافق على أن اتباع نهج مستجيب للتغيرات أثناء تنفيذ مشروع البناء من خلال وضع خطط بديلة مرنة يتم الاتفاق عليها مسبقاً للتعامل مع هذه التغيرات لضمان نجاح المشروع؟	AAV4.1

Item No.	Section B: Agile Principles	5 موافق بشدة Strongly Agree	4 موافق Agree	3 محايد Neutral	2 موافق قليلاً Disagree	1 بدرجة شديدة موافق Strongly Disagree	القسم B: المبادئ الرشيقة	رقم البند
Principle No.1	أولويتنا القصوى هي إرضاء العميل من خلال التسليم المبكر والمستمر للبرمجيات القيمة Our highest priority is to satisfy the customer through the early and continuous delivery of valuable software							المبدأ رقم 1
BAP1.1	Is the conducting the necessary modifications and changes required, by the contractor prior to the delivery phase are possible and less damage than doing it after the delivery stage?	169 41 %	184 44.7 %	39 9.5 %	15 3.6 %	5 1.2 %	هل إجراء التعديلات والتغييرات اللازمة من جانب المقاول قبل مرحلة التسليم ممكنة وأقل ضرراً من القيام بذلك بعد مرحلة التسليم؟	BAP1.1
BAP1.2	Is the employer's satisfaction having the priority at the main parties of the construction project and impact on the success of the construction project?	122 29.6 %	201 48.8 %	66 16 %	20 4.9 %	3 0.7 %	هل يحظى رضى صاحب العمل بالأولوية في الأطراف الرئيسية لمشروع البناء وتأثيره على نجاح مشروع البناء؟	BAP1.2
BAP1.3	Is the delivery of the construction project in the form of stages, gives the beneficiary and the contractor the opportunity to test the success of the project before the final delivery stage?	175 42.5 %	185 44.9 %	35 8.5 %	11 2.7 %	6 1.5 %	هل تسليم مشروع التشييد على شكل مراحل، يتيح للمستفيد والمقاول فرصة اختبار نجاح المشروع قبل مرحلة التسليم النهائية؟	BAP1.3
Principle No.2	نرحب بتغيير المتطلبات، حتى في وقت متأخر من التطوير. تسخر العمليات الرشيقة التغيير من أجل الميزة التنافسية للعميل Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage							المبدأ رقم 2
BAP2.1	Is the existence of a flexible design so that changes can be made during the execution phase of the construction project affects the	146 35.4 %	179 43.4 %	45 10.9 %	33 8 %	9 2.2 %	هل يؤثر وجود تصميم مرن بحيث يمكن إجراء التغييرات أثناء مرحلة تنفيذ مشاريع التشييد على نجاح المشروع؟	BAP2.1



	success of the construction project?							
BAP2.2	Is develop a pre-agreed plan (between the contractor and the employer) on how to make the necessary changes required during the execution phase, affects the success of the construction project?	162 39.3 %	188 45.6 %	40 9.7 %	15 3.6 %	7 1.7 %	هل يؤثر وضع خطة متفق عليها مسبقاً (بين المقاول وصاحب العمل) بشأن كيفية إجراء التغييرات اللازمة خلال مرحلة التنفيذ، على نجاح مشروع التشييد؟	BAP2.2
Principle No.3	تقديم برامج العمل بشكل متكرر، من أسبوعين إلى شهرين، مع تفضيل الجدول الزمني الأقصر Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale							المبدأ رقم 3
BAP3.1	Do you agree that dividing of the work activities of the project into repetitive processes and each process contains specific objectives and time, and all obstacles are discussed at the beginning of each process, will lead to accomplish the work very quickly and take advantage of the errors that occur in each process?	160 38.8 %	191 46.4 %	48 11.7 %	9 2.2 %	4 1 %	هل توافق على أن تقسيم أنشطة عمل المشروع إلى عمليات متكررة وتتضمن كل عملية أهدافاً ووقت محددين ومناقشة جميع العقبات في بداية كل عملية سيؤدي إلى إنجاز العمل بسرعة كبيرة والاستفادة من الأخطاء التي تحدث في كل عملية؟	BAP3.1
Principle No.4	يجب أن يعمل رجال الأعمال والمطورون معاً يومياً طوال المشروع Business people and developers must work together daily throughout the project							المبدأ رقم 4
BAP4.1	Do you agree that the cooperation between the employees and senior management, affects the success of the project management tasks in the construction project?	193 46.8 %	149 36.2 %	40 9.7 %	20 4.9 %	10 2.4 %	هل توافق على أن التعاون بين الموظفين والإدارة العليا يؤثر على نجاح مهام إدارة المشروع في مشروع البناء؟	BAP4.1
BAP4.2	Do you agree that to give both the employee and the employer a sense of joint responsibility for the completion of the project affect the success of the construction project?	199 48.3 %	153 37.1 %	38 9.2 %	16 3.9 %	6 1.5 %	هل توافق على أن إعطاء الموظف وصاحب العمل إحساساً بالمسؤولية المشتركة لإنجاز المشروع يؤثر على نجاح مشروع البناء؟	BAP4.2
Principle No.5	بناء مشاريع حول الأفراد المتحفزين ومنحهم البيئة والدعم الذي يحتاجون إليه والثقة بهم لإنجاز المهمة Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done							المبدأ رقم 5
BAP5.1	Do you agree that the approval of the project manager on the management policy depends on the motives of individuals and encourage them and give them confidence and not subject to pressure to complete the work assigned to them on the dates specified, leads to accomplishing these works quickly and without delay?	141 34.2 %	188 45.6 %	62 15 %	15 3.6 %	6 1.5 %	هل توافق على أن موافقة مدير المشروع على سياسة الإدارة تعتمد على دوافع الأفراد وتشجيعهم ومنحهم الثقة وعدم الضغط عليهم لإنجاز العمل المعين لهم في التواريخ المحددة مما سيؤدي إلى إنجاز هذه الأعمال بسرعة ودون تأخير؟	BAP5.1
Principle No.6	الطريقة الأكثر كفاءة وفعالية لنقل المعلومات إلى فريق المشروع وداخله هي إجراء محادثة وجهاً لوجه The most efficient and effective method of conveying information to and within a project team is a face-to-face conversation							المبدأ رقم 6
BAP6.1	Do you agree that the direct communication between the parties of the construction project to communicate the information and discuss the problems, affect the success of the construction project?	172 41.7 %	169 41 %	32 7.8 %	28 6.8 %	11 2.7 %	هل توافق على أن الاتصال المباشر بين أطراف مشروع البناء لإيصال المعلومات ومناقشة المشاكل يؤثر على نجاح مشروع البناء؟	BAP6.1

المبدأ رقم 7	برمجيات العمل هي المقياس الرئيسي للتقدم المحرز Working software is the primary measure of progress						Principle No.7
BAP7.1	هل توافق على أن برنامج عمل المشروع ينقسم إلى أجزاء من المهام لكل منها تعريف واضح لما هو مطلوب للعمل، ويساعد على اختبار وقياس تقدم المشروع وبالتالي يؤدي إلى نجاح المشروع البناء؟	0 %	1.2 %	9.7 %	49.5 %	39.6 %	Do you agree that the project work program is divided into parts of the tasks each of which has a clear definition of what is required to work, helps to test, and measure the progress of the project and thus lead to the success of the construction project?
المبدأ رقم 8	تعزيز العمليات الرشيقية التنمية المستدامة. يجب أن يكون الرعاة والمطورون والمستخدمون قادرين على الحفاظ على وتيرة ثابتة إلى أجل غير مسمى Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely						Principle No.8
BAP8.1	هل توافق على أن تطبيق مبادئ الاستدامة في المشروع وتهيئة بيئة عمل مستدامة للعمال من حيث الجوانب البيئية والاجتماعية والاقتصادية يساعد على الحد من التغيرات والحوادث في المشروع وبالتالي يؤدي إلى نجاح مشروع البناء؟	0.2 %	1.3 %	10.9 %	48.5 %	39.1 %	Do you agree that applying the principles of sustainability in the project and creating a sustainable working environment for workers in terms of environmental, social, and economic aspects helps reduce the changes and accidents in the project and thus lead to the success of the construction project?
المبدأ رقم 9	الاهتمام المستمر بالتفوق التقني والتصميم الجيد يعزز الرشاقة Continuous attention to technical excellence and good design enhances agility						Principle No.9
BAP9.1	هل توافق على أن الاهتمام المستمر بالتميز التقني والتصميم الجيد يؤدي إلى تجنب إعادة العمل أو الإفراط في التصميم؟ (أي العمل بمستوى كاف من الاكتمال والجودة لتحقيق الغرض المقصود منه)	0.2 %	2.9 %	9 %	48.3 %	39.6 %	Do you agree that the continued attention to technical excellence and good design leads to avoid the rework or over-design? (I.e. work at an adequate level of completeness and quality to achieve its intended purpose)?
المبدأ رقم 10	البساطة - فن تعظيم حجم العمل الذي لم يتم إنجازه - أمر أساسي Simplicity—the art of maximizing the amount of work not done—is essential						Principle No.10
BAP10.1	هل توافق على أن البدء في مشروع بناء مبسط إلى حد ما (من حيث المتطلبات) ثم توسيعه إذا لزم الأمر، يحقق نجاح المشروع خلال الفترة المحددة بدلاً من البدء في مشروع تشييد معقد للغاية (متطلبات مفرطة)؟	3.9 %	8.7 %	19.4 %	37.4 %	30.6 %	Do you agree that starting a construction project is somewhat simplistic (in terms of requirements) and then expanded, if necessary, achieves the success of the project within the specified period instead of starting a construction project that is too complex (excessive requirements)?
المبدأ رقم 11	تظهر أفضل البنى والمتطلبات والتصاميم من فرق عمل ذاتية التنظيم The best architectures, requirements, and designs emerge from self-organizing teams						Principle No.11
BAP11.1	هل توافق على أن وجود فريق متعدد الوظائف والمهارات والكفاءات في مشروع البناء يتمتع بسلطة العمل الجماعي والتعاوني يساعد على إنجاز مشروع البناء خلال الفترة المحددة ويمنع التأخير عند مقارنته بالعمل الفردي؟	1 %	2 %	8 %	49 %	40 %	Do you agree that the presence of a multi-functional team and skills and competencies in the construction project with the authority to work collectively and in a cooperative way, helps to complete the construction project within the specified period and prevents the delay when compared to work individually?
المبدأ رقم 12	على فترات منتظمة، يفكر الفريق في كيفية أن يصبح أكثر فاعلية ثم يقوم بضبط سلوكه وتعديله وفقاً لذلك. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly						Principle No.12
BAP12.1	هل توافق على أن وضع خطط تدريبية لتحسين أداء الموظفين العاملين في مشروع البناء يساعد على نجاح مشروع البناء؟	0.5 %	2.2 %	6.8 %	43.4 %	47.1 %	Do you agree that the development of training plans to improve the performance of staff working in the construction project, helps to succeed the construction project?

BAP12.2	Do you agree that having an integrated risk management plan that is expected to occur in the construction project will help to success the construction project?	208 50.5 %	171 41.5 %	25 6 %	6 1.5 %	2 0.5 %	هل توافق على أن وجود خطة متكاملة لإدارة مخاطر من المتوقع حدوثها في مشروع التشييد سيساعد على نجاح مشروع التشييد؟	BAP12.2
BAP12.3	Do you agree that setting time periods in the construction project during each period can conduct a review of project operations and take prompt corrective actions, when necessary, helps the success of the construction project within the required time, cost, and quality?	180 43.7 %	185 44.9 %	38 9.2 %	9 2.2 %	0 0 %	هل توافق على أن تحديد فترات زمنية في مشروع البناء خلال كل فترة يمكن أن يؤدي إلى مراجعة عمليات المشروع واتخاذ إجراءات تصحيحية فورية عند الضرورة يساعد على نجاح مشروع البناء في الوقت والتكلفة والجودة المطلوبة؟	BAP12.3

قسم C: الأسئلة المفتوحة

Section C : Open-Ended questions

(C1) يرجى تقديم أي تعليقات أخرى بخصوص هذه الدراسة

C1) Please provide any other comments regarding this study.

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(C2) يرجى تقديم أي تعليق بخصوص أي جانب يبدو أنه غير موجود في هذه الدراسة

C2) Please provide any comments regarding any aspect that appears to be lacking in this study.

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شكر وتقدير:

نحن نقدر لك توفير وقتك الثمين لملء الاستبيان.

مشاركتك تعني لنا الكثير ونحن نقدرها بشدة.

المعلومات التي شاركتها مهمة لتحليلنا وستمكنا من إجراء التحسينات اللازمة في الإدارة الرشيدة للمشاريع الإنشائية في المملكة العربية السعودية.

مرة أخرى، نحن ممتنون جداً لمساهماتك.

مع خالص التقدير؛

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جامعة ميدأوشن

Gratitude:

We appreciate you sparing your time to fill out the survey. Your involvement means a lot to us and we highly value it. The information you shared is significant to our analysis and will enable us to make improvements of the Agile management for the construction projects in KSA.

Once again, we are very grateful for your contribution.

Sincerely;

Your Brothers Students/Researchers

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