

The Impact of Risk Management on the Dimensions of Project Management Among Small and Medium Enterprises in Iraq

Ali Raqee Abdulhadi

Faculty of Engineering UPM, Malaysia

Mohd Khairol Anuar Bin Mohd Ariffin

Faculty of Engineering UPM, Malaysia

Razi Al-Zubaidi

Faculty of Engineering UPM, Malaysia

Akram Abdulsamad

Faculty of Economics and Political of science
University of Aden, Yemen

Zulkiflle B. Leman

Engineering Faculty, UPM, Malaysia

Siti Azfanizam binti Ahmad

Engineering Faculty, UPM, Malaysia

ABSTRACT

The present study investigates the relationship between risk management and project management among Iraq construction SMEs. The current research is focused on risk management as a unidimensional, while project management was taken as multi-dimensional by using its four main components, which are project scope, project timelines, project benefits, and project quality. Data were gathered from the employees who are working in construction SMEs in Iraq. 251 questionnaires were received and analyzed by using SPSS and smart PLS-SEM to measure the research model fit and examine the hypothesis whether accepted or not within the study context. The model measurement and structural equation model test indicated that all four main hypotheses were accepted, which means that risk management has a positive impact on the four main components of project management in the construction field in Iraq SMEs. Also, the theoretical and managerial implications of this research were then discussed at the end of this article.

Keywords: Risk Management, Project Management, SMEs, Iraq, Project Scope, Project Timeline, Project benefits, Project Quality.

INTRODUCTION

In our daily lives, there are several projects in process, and these go hand in hand with the advancements made in the field of project management. The community and society have a

strong motivation to implement successful projects and avoid failure [1]. Project managers are therefore under pressure to prevent such failure. The Project Management Institute (2004) states that time, quality, scope, and customer satisfaction are used to determine whether a project is successful. Most organizations now place a strong emphasis on risk management in order to avoid or reduce the risk that businesses confront and, as a result, reduce the likelihood of company failure. Risk management refers to a methodical and practical approach that aims to comprehensively comprehend, quantify, rate, and manage all risks that the firm is exposed to. Although higher-level corporate executives find the subject of risk management to be vital, not enough research has been done in this field because of how conceptually complex risk management is. Very few empirical research has looked at the connection between corporate success and overall risk management, with most of those studies focusing on companies listed on highly established and advanced stock markets [2].

In contrast to larger companies, SMEs have a harder time managing risk, according to Renn [3], Akbari, Memarian [4], observed that this is because SMEs frequently lack a clear understanding of business risk and their management is not well-organized, methodical, or standardized. According to Bekr [5], Aljamee and Naeem [6], Shibani, Awwad [7], SMEs in Iraq are organizations that frequently operate outside the established economic structure, disregard current laws and regulations, and continue to be somewhat indifferent to changing trends both domestically and internationally. These factors, along with a lack of effective policies, an appropriate legal framework, financial restrictions, access to credit, poor infrastructure, an unstable power supply, a shortage of skilled labour, and unethical behaviour, can be seen as contributing to the lack of SMEs in Iraq [8].

The previous study in the context of Iraq revealed that, despite the significance of small and medium mechanical factories in Iraq, project management in small and medium mechanical factories in Kufa has numerous difficulties. Cost overruns, sluggish scheduling, failure, and occasionally project abandonment are all frequent occurrences in projects that are all related to the lack of a procedure to manage risk [9]. This study attempts to look into how risk management affects SMEs' project management in Kufa.

LITERATURE REVIEW

Risk Management

The majority of businesses have developed risk management departments in order to reduce the risks to which they are currently exposed or may be exposed in the future. A company's entire set of guidelines and procedures for identifying, analyzing, assessing, controlling, and responding to any potential exposures, as well as comparing the effectiveness and profitability of any actions done, are all included in the risk management process [10]. Risk management is a practice that considerably varies based on the circumstance, and the process also has varied meanings for various individuals. Depending on the context, risk has several definitions. In decision theory, the risk is connected to choosing under conditions where natural state probabilities are known [3]. When the decision-maker may assign probabilities to potential outcomes, risk occurs according to economic theory [11]. A further definition of risk is provided by Che, Frey [8] as an unpredictable event or circumstance that, if it materializes, has a favourable (opportunity) or unfavourable (threat) impact on project objectives.

However, according to Brooks [12], Chapman and Ward [13], risk management is a method used by businesses to identify, measure, priorities, and lessen the negative effects of uncertainty. Therefore, risk management is a methodical strategy for minimizing the adverse effects of any particular phenomena. Risk aversion could result from a definition of risk that solely looks down on it. Although risk aversion might be an individualized trait, it is hard to completely eliminate risk in business [14]. The majority of risk-taking behaviors are connected to opportunities. Companies must therefore be capable of handling risks intelligently in order to not only reap the rewards but also to remain in business. Major shareholders are strongly motivated to increase their investments in the company via risk management. The organization can use this investment as a tool to offer greater commercial prospects, which will ultimately result in a sustainable competitive advantage. Inefficient risk management leads to more expenses and expensive lower-tail outcomes for the business and stockholders [15]. There were historically two main concepts in risk management. Instead of focusing on the potential connected with a risk, risk management manages the negative effects of that risk. The alternative perspective is the independent management of risks by categorizing hazards into several silos [16]. One event may, for instance, negatively affect one unit of the corporation while providing an opportunity for another unit of the organization. Traditional risk management, however, only addresses the threat without taking into account the opportunity's compensating effect. Total risk management, in contrast to traditional risk management, addresses both possible downturns and the exploitation of possibilities caused by dynamic phenomena [17].

Therefore, in this sense, risk management may be described as a methodical and practical approach that aims to comprehensively comprehend, measure, analyse, and manage all risks that the firm faces. Although higher-level corporate executives find the subject of risk management to be vital, not enough research has been done in this field because of how conceptually complex risk management is. Very few empirical research has looked at the connection between corporate success and overall risk management, with most of those studies focusing on companies listed on highly established and advanced stock markets [2]. However, the majority of risk management papers only consider how effective risk management is at preventing economic downturns, rather than measuring the performance of various risk management systems [18]. This could cause risk management to be seen as a means rather than an end in and of itself, resulting in lower corporate performance. Therefore, by utilizing a different environment that hasn't been examined, this empirical study aims to contribute to the literature [19].

Risk Management in Construction

The construction sector is one of the most active, dangerous, and difficult industries. Due to the nature of construction activities, processes, environments, and organizational structures, risk is inherent in every construction project. Risk in the construction industry has drawn attention since it is closely related to time and cost overruns that are connected to construction projects. Despite the fact that Xu, Hu [20], Ngala [21] have expressed this as an exposure to loss only, Renn [3], Akbari, Memarian [4], Diaz and Muñoz [10] have defined risks as exposure to economic loss or gain that increases from participation in the construction process. According to Chereni, Sliuzas [22], risk in the construction business is a process variable whose variation has an impact on the three project variables of time, cost, and quality.

It is widely acknowledged that employees working in the construction sector constantly deal with a range of unknowable, unanticipated, usually unfavourable, and frequently unpredictable elements [11]. According to Xu, Hu [20], these circumstances apply to the profit structure of every commercial firm and are a fundamental aspect of a free business system. All individuals and groups (client groups, design teams, project management teams, contractors, etc.) in the construction sector that are worried about cost, schedule, and quality need to manage risks.

Public sector projects and private sector projects are the two main categories of construction projects worldwide. In general, public sector construction project management procedures are more specialized than private sector procedures. Projects in the public sector are typically more complex than those in the private sector [23]. The legal framework for public sector construction projects around the world varies greatly in a similar manner. For instance, public sector projects are governed by law in Spain and France, whereas in the United Kingdom, both the public and private sectors must abide by general regulations [11].

It is crucial to create a proper appraisal of the project before a company decides to start a building project. When it comes to commercial development, it is necessary to evaluate the project's business benefits as well as any associated risks and limits. In a public project, the financial analysis will be more important than the return on investment as the project's product [10]. This is why the conceptual stage of a new construction project is crucial because all decisions made during this stage have a big impact on the project's overall cost [24]. It is also the stage where the majority of any prospective future uncertainties are experienced [8].

Additionally, risk management should be a key component of managing risks and reducing their effects on the project life cycle [3]. Risk management, as we've already mentioned, is a process for handling hazards in a project and attempting to lessen their consequences [10]. A risk management strategy must be set early in a project and that risk is regularly handled throughout the project life cycle [11]. Identifying risks during the conceptual stage of a project is crucial because it not only makes it possible to determine project constraints and suitable expenditures, but it also focuses project management attention on how to control and distribute them.

The Facts of Risk Management in Small and Medium Enterprises

According to recent research, the growth and employment creation of small and medium-sized businesses are directly related. This is because small and medium-sized businesses have many advantages over larger organizations, including the capacity to quickly respond to client needs, flexibility, innovation, and the ability to modify product offers to those needs[25].

The idea of risk and its management has been the subject of numerous discussions among authors and is regarded as a crucial step in SMEs. For instance, Renn [3] claimed that, in contrast to larger businesses, SMEs face challenges with risk management. Additionally, Akbari, Memarian [4] discovered in their own study that SMEs frequently lack well-structured, methodical, or standardized management and lack an explicit understanding of business risk.

However, Porro, Kim [26] suggested a number of risk management practices that SMEs can implement, including buying insurance, keeping cash reserves, installing security systems, diversifying, hiring, receiving safety training, developing policies and procedures, etc. These

practices can be further broken down into physical and monetary precautions. By advocating that risk management procedures be streamlined and ingrained into routine company operations, planning, budgeting, and organizational culture, Bérastégui, Jaspar [27] further stressed the significance of risk management techniques in improving an organization's performance.

Project Management

The scope of activities falling under the peripheral of project management techniques and the way projects are handled expands as a result of the twenty-first century's evolving corporate environment. Projects are open systems because they operate in an environment that is free from constraints and must adapt to the constantly shifting dynamics of their surroundings [25]. Utilizing project management approaches, projects can be finished on schedule, under budget, and according to specifications. They also aid in achieving the organization's other objectives, including productivity, quality, and cost-effectiveness. The goal of project management is to guarantee that projects are completed and that agreed-upon time, cost, and scope targets are met [28].

Project management (PM) is the "application of methods, tools, techniques, and skills to a project," according to [25]. Additionally, they have noted that PM is a transient organization that is required to deliver a distinct and preset end or result in a predetermined time utilizing predetermined resources. Project management, on the other hand, is the process of applying knowledge, skills, tools, and techniques to project activities in order to achieve project requirements, according to PMI, the Project Management Institute (2013). A project is also described by Tkach, Shmorgun [29] as a time and cost-constrained operation to materialize a set of defined deliverables up to quality standards and requirements.

To put it another way, project management is the organization, coordination, and oversight of project operations to achieve project goals while successfully managing and balancing the limitations of scope, schedule, and money [30]. The fundamental goal is to generate high-quality deliverables that satisfy or surpass the project stakeholders' expectations. Unlike processes or operations, which are permanent or semi-permanent and are seen as continual functional effort to provide a successful good or service, projects are transient in nature.

Project management, according to Querstret, O'Brien [11], is a key technique in the transformations that many organizations are going through as they move from a machine-like, stable model to a more dynamic one in response to external turbulence and change. The challenge for project managers is to help team members cope with a process that they may find unpleasant and confusing while also encouraging flexibility, adaptability, and the acceptance of change as a permanent state.

How to carry out the plan is the first thought that occurs when an idea and its implementation are formed. Project management must therefore cover a wide range of issues, including scope, time, cost, and quality. These characteristics reflected the limitations around which all fresh endeavours and projects are based. Project constraints, according to Aljamee and Naeem [31], are limitations placed on the project team by stakeholders or environmental conditions. Scope, timeliness, benefits, and quality are the four key project constraints, as was before mentioned.

The element of the project that involves determining and documenting a list of specific objectives, deliverables, features, tasks, functions, deadlines, and finally expenses is known as the scope of the project. It is a list of the objectives to be met and the tasks that go into completing the project [32]. While the project's timeliness indicates the limited time available for completing project goals, it also contains the amount of time that should pass before the project's limited time runs out [1]. Additionally, according to Mikes and Kaplan [9], project management refers to a good or service that serves the intended goal and can function satisfactorily. While a project charter, which might be linked to the goals of the project, its course, and duration, is referred to in business and early-stage project documents as the benefits of the project, these are the benefits and gains that the project brings on [33]. As a result, the following hypothesis could be true:

H1: Risk Management has a significant and positive impact on Project Scope among SMEs in Kufa.

H2: Risk Management has a significant and positive impact on Project Quality among SMEs in Kufa.

H3: Risk Management has a significant and positive impact on Project timelines among SMEs in Kufa.

H4: Risk Management has a significant and positive impact on Project Benefits among SMEs in Kufa.

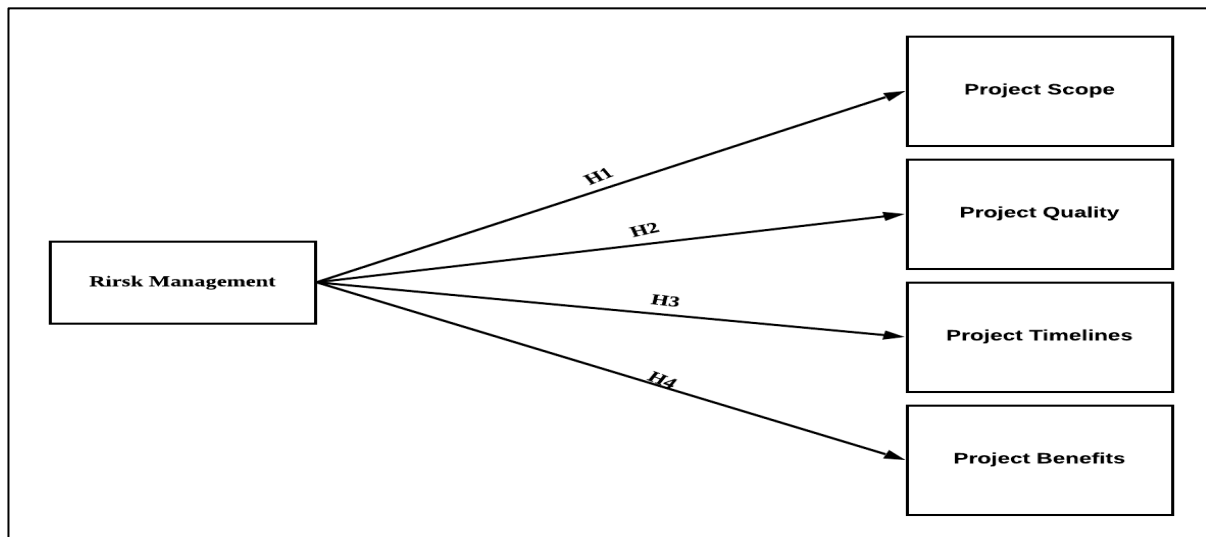


Figure 1: Research Framework

RESEARCH METHODOLOGY

The relationship between risk management and project management was examined in the present study. The quantitative research was conducted by using the survey method and distributed the questionnaire among employees of the SMEs' project management department. Close-ended questions with a 5-point Likert scale were used for all variables. The probability sampling technique, which is sample random sampling, was used in this study.

Moreover, the measurement of variables was adapted from prior studies to be more appropriate for this study. The questionnaire of this research was translated to Arabic language by two bilingual experts in the marketing area to check on clarity, relevance, and back-

translation. This way is part of validity to make sure that both English and Arabic versions carry the same meaning and measure what the researcher wants to measure, this method has been applied by several studies such as [34-37].

The pilot study was applied by distributing the questionnaire among 50 employees within the target population of this study to test the validity and reliability of the study. The Cronbach's alpha for all variables is higher than 0.70. Thus, it will be accepted and considered reliable. The Cronbach's alpha ranged between 0.79 (Project Scope) and 0.95 (Project Timeline), which exceeded the suggested scale of 0.70 [38-40]. In conclusion, there is an internal consistency for the variables and no items have been omitted. Furthermore, through the actual data collection stage, 330 questionnaires were distributed among the respondents, and 251 questionnaires were received. Thus, the data were analysed utilizing SPSS and smart PLS-SEM to measure the research model fit and examine the hypothesis whether accepted or not within the study context.

ANALYSIS AND FINDINGS

Descriptive Analysis

As displayed in table 1, project timeline has gotten the lowest score 3.0239 which is pointed out the respondents somewhat disagree with the measurement. On the other hand, the project benefits' mean score was a highest with 3.5568 which means that the respondents neither agreed nor disagreed. Subsequently, the variability accepted as the standard deviation ranged between 0.848 and 1.20021. Therefore, the respondents have various opinions about the studied variables.

Table 1: Descriptive Statistics for Study Variables (Mean and S.D)

Variable	Minimum	Maximum	Mean	%	S.D
Risk Management Strategies	1.13	5.00	3.3785	67.570	0.87985
Project Timeline	1.00	5.00	3.0239	60.478	1.05732
Project Scope	1.00	5.00	3.3416	66.832	0.99377
Project Quality	1.00	5.00	3.1932	63.864	1.20021
Project Benefits	1.00	5.00	3.5568	71.136	0.96100
Project Management	1.13	5.00	3.2789	65.578	0.84835

The measurement model evaluation

The output of the measurement model's assessment boosts a measurement scales' psychometric properties. In other words, the result has emphasized the reliability and validity of the measuring instrument (Table 1). Where AVE and items' factor values exceeded 0.50 [41, 42]. While the value of Composite Reliability and Cronbach Alpha, which explains the reliability of measuring tools, were also higher than 0.70 which consider the lowest value required [42].

Table 2: Items loading, Cronbach's alpha, Composite Reliability (CR) and AVE

Main-Dimension	Sub- Dimension	Code	Loading	Cronbach's alpha	CR	AVE
Risk Management Strategies (RMS)	Reduction	RD1	0.817	0.820	0.881	0.650
		RD2	0.820			
		RD3	0.790			
		RD4	0.796			
	Transferring	RT1	0.730	0.809	0.875	0.638
		RT2	0.785			
		RT3	0.855			
		RT4	0.819			
	Avoidance	RA1	0.773	0.825	0.884	0.656
		RA2	0.820			
		RA3	0.842			
		RA4	0.804			
	Hedging	RH1	0.823	0.843	0.895	0.680
		RH2	0.826			
		RH3	0.863			
		RH4	0.784			
Project Management (PM)	Project Timeline	PT1	0.813	0.865	0.907	0.710
		PT2	0.850			
		PT3	0.850			
		PT4	0.858			
	Project Scope	PS1	0.772	0.783	0.860	0.605
		PS2	0.758			
		PS3	0.777			
		PS4	0.805			
	Project Quality	PQ1	0.745	0.832	0.888	0.666
		PQ2	0.871			
		PQ3	0.797			
		PQ4	0.846			
	Project Benefits	PB1	0.806	0.806	0.873	0.633
		PB2	0.802			
		PB3	0.802			
		PB4	0.772			

The present study used Fornell and Larcker approaches for assessing the validity of discriminant for the model of study (Table 3). The square root for all AVE is not smaller than the correlations among constructs (Table2). which means, all elements achieve the criterion that [41] has suggested. Thus, outcomes of the Fornell and Larcker approaches which is used in the present study emphases that the discriminant validity of the study model.

Table 3: Discriminant Validity (Fornell and Larcker, 1981) for Latent Variables

	AVE	PB	PQ	PS	PT	RA	RD	RH	RT
PB	0.633	0.795							
PQ	0.666	0.538	0.816						
PS	0.605	0.483	0.525	0.778					
PT	0.710	0.471	0.623	0.547	0.843				
RA	0.656	0.317	0.295	0.411	0.347	0.810			
RD	0.650	0.277	0.274	0.365	0.277	0.496	0.806		
RH	0.680	0.317	0.434	0.404	0.392	0.395	0.332	0.825	
RT	0.638	0.353	0.430	0.397	0.415	0.587	0.542	0.361	0.799

Note: RD: Reduction, RT: Transferring, RA: Avoidance, RH: Hedging, PT: Project Timeline, PS: Project Scope PQ: Project Quality, PB: Project Benefits

The structural model evaluation

Once the goodness of the measurement model has been evaluated, the subsequence stages are to examine the hypothesized association between variables by utilizing the PLS Algorithm and assessed the predictive power of the model through estimation of the (R^2) values. In PLS-SEM, a bootstrapping technique was applied to test the degree of significance for all paths. Specifically, the bootstrapping result showed that the relationship between risk management toward project scope is significant (H1: $\beta=0.513$, $t=10.522$); thus, H1 is supported. On the other hand, risk management shows a significant positive relationship with Project Quality (H2: $\beta=0.466$, $t=9.317$), and H2 is supported. Moreover, risk management is found significant toward the project timeline (H3: $\beta=0.466$, $t=8.598$), H3 is supported. Subsequently, risk management is significant towards project benefits (H4: $\beta=0.412$, $t=7.094$), H4 is accepted. Figure 2 and table 4 shows the results of path coefficients.

Table 4: Summary of Structural Model for Main Hypotheses Results

H	Exog.	⇒	Endo.	Original Sample (β)	Standard Deviation (STDEV)	t-value (C.R)	p-value	Result
H1	RM	⇒	PS	0.513	0.049	10.522	0.00	Supported
H2	RM	⇒	PQ	0.466	0.050	9.317	0.00	Supported
H3	RM	⇒	PT	0.466	0.054	8.598	0.00	Supported
H4	RM	⇒	PB	0.412	0.058	7.094	0.00	Supported

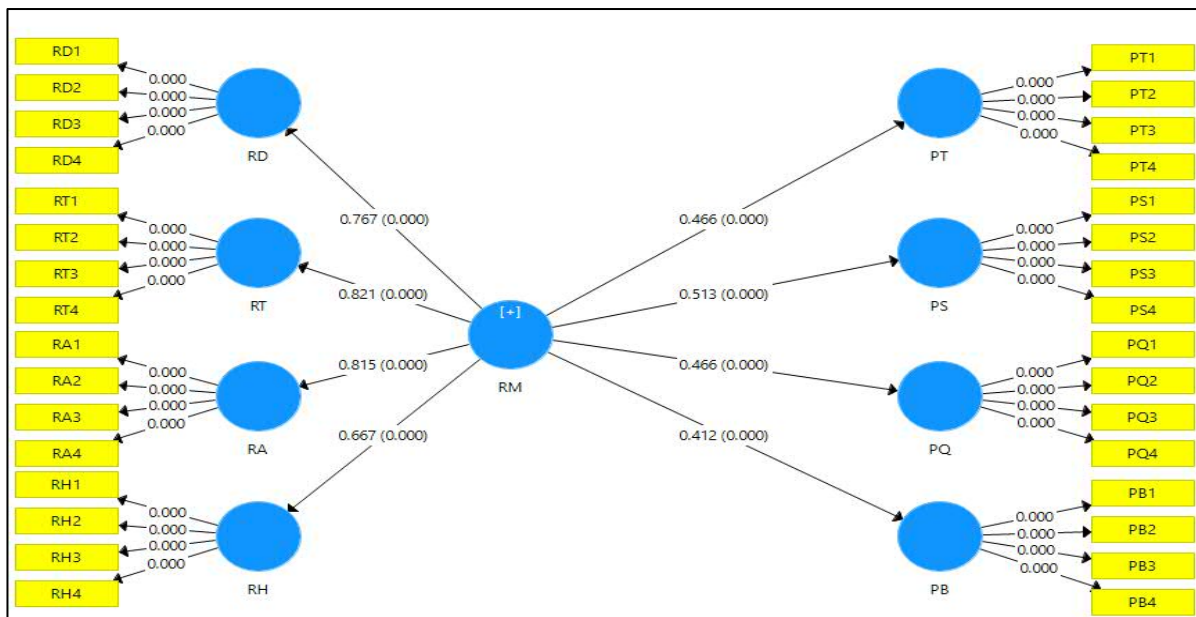


Figure 2: Results of path coefficients

Moreover, the present study assessed the predictive power of the model through the estimation of the (R^2) values. The direct influence of risk management accounted for 26.3% ($R^2 = 0.263$), 21.7% ($R^2 = 0.217$), 21.7% ($R^2 = 0.217$), and 17.0% ($R^2 = 0.170$) of variance in project scope, project quality, project timeline, and project benefits respectively.

Table 5: Coefficient of determination result R^2

Exogenous Constructs	Endogenous Construct	R^2	Chin (1998)
Risk Management	Project Scope	0.263	Moderate
Risk Management	Project Quality	0.217	Moderate
Risk Management	Project Timeline	0.217	Moderate
Risk Management	Project Benefit	0.170	Weak

CONCLUSION

Even though risk management and project management have created essential research interest in the literature, most researchers have indicated that the effect of risk management on the components of project management, namely project scope, project quality, project timeline, and project benefits in developing countries has not been studied. Therefore, this research sought to comprehend the main role that risk management play in impacting the components of project management in SMEs in Iraq.

The current research hypothesized that risk management in SMEs would be led to an improvement the project management. Based on the analysis, the study found that risk management has a significant impact on all components of project management in Iraq SMEs. The results which have been shown in this study totally align with the previous studies such as [33, 43, 44]. Even though risk management impacts all components of project management, each component has affected by risk management in another way. In other words, SMEs in Iraq consider the risk management is the implementation of projects have minimized costs to

organization delays in project implementation. In addition, SMEs in Iraq are suffering from the absence of risk management. Therefore, it reflects on project timelines and project quality.

On the other hand, this paper contributes to our understanding of the importance of professionals such as project managers in SMEs more sustainable economy and society. As such, this research focuses on how the risk management elements have contributed to the development, adoption, adaptation, and projects success among employees of SMEs in Iraq. Moreover, policy-makers need to prepare a priority list of the of risk management and internal control influence on project management by SMEs in Iraq. Therefore, the government of Iraq should support risk management strategies to move and reach project success in SMEs in Iraq.

References

1. Zhang, Y., *Selecting risk response strategies considering project risk interdependence*. International Journal of Project Management, 2016. **34**(5): p. 819-830.
2. Lin, S. and D. Huang, *Project Risk Management*, in *Project Management Under Internet Era: How to Respond to Challenging Changes in the Digital Era*, S. Lin and D. Huang, Editors. 2020, Springer Singapore: Singapore. p. 209-246.
3. Renn, O., *New challenges for risk analysis: systemic risks*. Journal of Risk Research, 2021. **24**(1): p. 127-133.
4. Akbari, M., et al., *Prioritizing policies and strategies for desertification risk management using MCDM-DPSIR approach in northeastern Iran*. Environment, Development and Sustainability, 2021. **23**(2): p. 2503-2523.
5. Bekr, G.A., *Causes of delay in public construction projects in Iraq*. Jordan Journal of Civil Engineering, 2015. **9**(2).
6. Aljamee, H.K. and S.M. Naeem. *The benefits of applying project management methodology on project delay: A study in construction projects in Iraq*. in *IOP Conference Series: Materials Science and Engineering*. 2020. IOP Publishing.
7. Shibani, A., et al. *Adopting Building Information Modelling in Small and Medium Enterprises of Iraq's Construction Industry*. in *International Conference on Industrial Engineering and Operations Management*. March ed. IEOM Society. 2020.
8. Che, W., et al., *PRAISE-HK: A personalized real-time air quality informatics system for citizen participation in exposure and health risk management*. Sustainable Cities and Society, 2020. **54**: p. 101986.
9. Mikes, A. and R.S. Kaplan. *Towards a contingency theory of enterprise risk management*. 2014. AAA.
10. Diaz, E.O. and M. Muñoz, *Strategy for Performing Critical Projects in a Data Center Using DevSecOps Approach and Risk Management*. International Journal of Information Technologies and Systems Approach (IJITSA), 2020. **13**(1): p. 61-73.
11. Querstret, D., et al., *Improving fatigue risk management in healthcare: A scoping review of sleep-related/fatigue-management interventions for nurses and midwives (reprint)*. International Journal of Nursing Studies, 2020. **112**: p. 103745.
12. Brooks, C., *Introductory Econometrics for Finance*. Cambridge University Press, 2a upplagan. ISBN-13 (2008), 2008: p. 978-0.
13. Chapman, C. and S. Ward, *Project risk management processes, techniques and insights*. 2003: John Wiley & Sons Ltd.
14. Mac Donald, K., D. Rezaia, and R. Baker, *A grounded theory examination of project managers' accountability*. International Journal of Project Management, 2020. **38**(1): p. 27-35.
15. Zhou, S. and P. Yang, *Risk management in distributed wind energy implementing Analytic Hierarchy Process*. Renewable Energy, 2020. **150**: p. 616-623.
16. Taofeeq, D.M., A.Q. Adeleke, and C.-K. Lee, *The synergy between human factors and risk attitudes of Malaysian contractors': Moderating effect of government policy*. Safety Science, 2020. **121**: p. 331-347.

17. Bairagi, S., A.K. Mishra, and A. Durand-Morat, *Climate risk management strategies and food security: Evidence from Cambodian rice farmers*. Food Policy, 2020. **95**: p. 101935.
18. Oddo, P.C., et al., *Deep Uncertainties in Sea-Level Rise and Storm Surge Projections: Implications for Coastal Flood Risk Management*. Risk Analysis, 2020. **40**(1): p. 153-168.
19. Goldstein, A.P. and M. Kearney, *Know when to fold 'em: An empirical description of risk management in public research funding*. Research Policy, 2020. **49**(1): p. 103873.
20. Xu, X., et al., *Effects of different BP management strategies on postoperative delirium in elderly patients undergoing hip replacement: A single center randomized controlled trial*. Journal of Clinical Anesthesia, 2020. **62**: p. 109730.
21. Ngala, J.K., *Evaluation of Inadequate Risk Management On Construction Projects In Zambia*. 2018, Cavendish University.
22. Chereni, S., et al., *The influence of governance rearrangements on flood risk management in Kampala, Uganda*. Environmental Policy and Governance, 2020. **30**(3): p. 151-163.
23. Ahmed, W. and M.Z. Rashdi, *Understanding the influence of lean and agile strategies on creating firms' supply chain risk management capabilities*. Competitiveness Review: An International Business Journal, 2021. **31**(5): p. 810-831.
24. Lozano, J.-M., S. Zuluaga, and M. Sánchez-Silva, *Developing flexible management strategies in infrastructure: The sequential expansion problem for infrastructure analysis (SEPIA)*. Reliability Engineering & System Safety, 2020. **200**: p. 106951.
25. Kim, S., S. Chang, and D. Castro-Lacouture, *Dynamic Modeling for Analyzing Impacts of Skilled Labor Shortage on Construction Project Management*. Journal of Management in Engineering, 2020. **36**(1): p. 04019035.
26. Porro, R., et al., *Evaluating erosion management strategies in Waikiki, Hawaii*. Ocean & Coastal Management, 2020. **188**: p. 105113.
27. Bérastégui, P., et al., *Informal fatigue-related risk management in the emergency department: A trade-off between doing well and feeling well*. Safety Science, 2020. **122**: p. 104508.
28. Wu, W., et al., *Using Radar and Optical Data for Soil Salinity Modeling and Mapping in Central Iraq*, in *Environmental Remote Sensing and GIS in Iraq*, A.M.F. Al-Quraishi and A.M. Negm, Editors. 2020, Springer International Publishing: Cham. p. 19-40.
29. Tkach, I., et al., *IMPLEMENTATION OF THE PROJECT APPROACH IN PUBLIC ADMINISTRATION*. International Journal of Management (IJM), 2020. **11**(6).
30. Al-Balushi, Z. and C.M. Durugbo, *Management strategies for supply risk dependencies: empirical evidence from the gulf region*. International Journal of Physical Distribution & Logistics Management, 2020. **50**(4): p. 457-481.
31. Aljamee, H.K. and S.M. Naeem, *The benefits of applying project management methodology on project delay: A study in construction projects in Iraq*. IOP Conference Series: Materials Science and Engineering, 2020. **745**(1): p. 012155.
32. Bowers, J. and A. Khorakian, *Integrating risk management in the innovation project*. European Journal of Innovation Management, 2014. **17**(1): p. 25-40.
33. Marcelino-Sádaba, S., et al., *Project risk management methodology for small firms*. International Journal of Project Management, 2014. **32**(2): p. 327-340.
34. Jandab, A., et al., *IT-Based Innovation and New Product Development Performance in Yemen: The Moderating Role of Intellectual Property*. International Journal of Business Society, 2019. **3**(11): p. 1-8.
35. Abdulsamad, A., et al., *The Importance of Entrepreneurial Orientation's Dimensions in Influencing the Organizational Performance of Food and Beverage SMEs*. Advances in Social Sciences Research Journal, 2020. **7**(12).
36. Al-Ghamdi, M., et al., *Antecedents and Consequences of Employee Well-Being: Empirical Study on Saudi Aramco*. Advances in Social Sciences, 2021. **Volume 8, No 9**: p. 22.

37. Al-Ghamdi, M., et al., *Employee Well Being and Knowledge Sharing Behavior Among Employees of Saudi Aramco*. *Advances in Social Sciences Research Journal*, 2021. **8**(8).
38. Nunnally, J.C. and I. Bernstein, *Psychometric Theory McGraw-Hill New York*. The role of university in the development of entrepreneurial vocations: a Spanish study, 1978.
39. Jandab, A., et al., *THE INFLUENCE OF IT CAPABILITY ON IT-BASED INNOVATION: THE MEDIATING ROLE OF ORGANIZATIONAL LEARNING CAPABILITY*. 2020: p. 2020.
40. Abdulsamad, A., et al., *The Impact of Market Orientation Components on Organizational Performance of SMEs. The single-industry approach "Food and Beverage Sector"*. *Advances in Social Sciences Research Journal*, 2021. **8**: p. 504-516.
41. Fornell, C. and D.F. Larcker, *Evaluating structural equation models with unobservable variables and measurement error*. *Journal of Marketing Research*, 1981. **18**(1): p. 39-50.
42. Hair, J.F., et al., *Advanced issues in partial least squares structural equation modeling*. 2017: saGe publications.
43. Humburg, M. and R. van der Velden, *Skills and the graduate recruitment process: Evidence from two discrete choice experiments*. *Economics of Education Review*, 2015. **49**: p. 24-41.
44. Vanichchinchai, A., *Supply chain management, supply performance and total quality management*. *International Journal of Organizational Analysis*, 2014. **22**(2): p. 126-148.