



An analysis using a structural equation model to assess the various factors influencing the Iraqi construction industry, with a specific focus on the moderating of organizational culture.

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ABSTRACT

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The construction industry is of great importance as it is able to achieve cost savings and promote economic development worldwide. Regardless of a country's level of development, be it an underdeveloped country. Nevertheless, there are a number of constraints and hazards that hinder the start or progress of a construction project, and which usually have a significant negative impact on the overall project. In a previous study, the influence of a company on construction performance was investigated, leaving out certain factors. This study aims to fill this research gap by using the methodology of organizational culture and the various factors including stakeholders, communication, cost, technology, top management support and local authority support to investigate the impact on the Iraqi construction industry. The data pertaining to the research was gathered through a survey questionnaire administered to multiple construction project practitioners in Iraq. The research objective was achieved through structural equation modeling (SEM). The study operator a quantitative approach to gather data, which includes a survey questionnaire administered to construction project practitioners and interviews conducted with academicians who specialize in the construction industry. The results obtained from the SEM analysis indicate the model is appropriate for the characteristics of variables and data under investigation. The further analysis of research outcomes demonstrated that the hypotheses (H1, H2, H3, H4, H5, H6, H7, and H8) all the results were found to

the correlation demonstrates statistical significance, its magnitude suggests the strength of the relationship. A relationship exists between stakeholder factors and their influence on the Iraqi construction industry, as indicated by a positive

correlation of 0.080. Alterations in construction industry developments might be correlated with stakeholder factor changes, as indicated by the positive correlation; however, the relationship is not definitive, noting that correlation does not imply causation is essential. Although the statistical relationships presented offer valuable insights, further investigation and analysis are required to comprehend the fundamental mechanisms and factors that underlie these correlations within the organizational culture and construction industry of Iraq.

be statistically significant and had positive findings. A survey instrument was utilized to obtain information for the research from many construction companies in Iraq.

The data have been analyzed, and an SPSS AMOS 26 software-based structural model has been constructed to test the results of the hypotheses. A moderate relationship can be inferred between organizational culture and the construction industry in Iraq, as indicated by a positive correlation coefficient of 0.036. A positive association is denoted by the positive sign that is an increase in one variable is typically accompanied by an increase in the other. A correlation coefficient of 0.08 indicates a positive relationship between organizational culture and stakeholder factors. Although

1.0. Introduction

Currently, construction companies are trying to increase their competitiveness by adapting to a changing business environment and investing in organizational culture and development programs [1]. In recent years, this work has spread around the world. To demonstrate this investment, it is important to provide evidence that the value of the stakeholders is adequately recognized to ensure that it yields the desired results and significantly improves performance [2]. There is a growing awareness in the construction industry of the importance of stakeholders for companies to develop the skills and knowledge of their employees. The construction companies need new labor market stakeholders' factors to be more skilled, and workers already in the workforce are more skilled [3]. This need is particularly evident in the construction industry, which is affected by technological change. A study on stakeholder's organizational culture needs in the construction industry conducted by the construction organizational culture directorate (2021) found that there is a lack of skills at the management level to achieve this if quality and productivity levels were improved. Additional organizational culture is needed to close the skills gap [4]. Stakeholders are the most valuable asset in any organization, especially in low-skilled industries and the construction industry. An organization is often described as good as its shareholder factors in the construction industry of Iraq. Organizations can achieve their goals only through their shareholder factors, and continuing education is now a way to preserve new growth and improve the performance of workers in the construction industry [5].

1.2. Statement of the Problem

It is important to identify project stakeholders and recognize immediate concerns and anxieties that may affect the project. During the project, it is needed to follow the stakeholder's management process because, stakeholders' effects are dynamic and change over time [6]. The Iraqi construction industry, different stakeholders carry distinct worries and anxieties that can exert an influence on projects. Regulatory authorities in Iraq may have concerns regarding compliance with local building codes and regulations. Communities residing near construction sites may express concerns regarding potential disturbances to their daily routines, including heightened levels of noise, traffic congestion, and adverse effects on the environment. To effectively address these concerns, it is significant to engage and communicate with the society. The construction firms may have concerns regarding the accessibility of a proficient workforce and the possibility of delays caused by political or security-related matters. Project stakeholders may express apprehension regarding project delays resulting from routine procedures or alterations in governmental policies [7].

Table 1: Stakeholder management processes in the Iraqi construction industry

Internal Stakeholders	Project managers-clients-construction teams personnel directly engaged in the project.
External Stakeholders	Suppliers-subcontractors-regulatory organizations-NGOs-municipal governments- communities.
Mapping Stakeholders	Sort project stakeholders into groups according to their interest in and impact on the endeavor.
Evaluating Stakeholders	opinions, anticipations, and possible influence on the undertaking.
Consulting	Involving relevant parties in the decision-making procedure. Collect input, resolve concerns, and verify that the expectations of stakeholders are in accordance with the goals of the project.

Analyze and manage existing research only at the beginning of the project or when the project is first encountered. The strengths and interests of stakeholders are dynamic, so it is important to properly manage their liquidity for successful projects[8, 9]. Stakeholder management involves dynamic feedback from stakeholders throughout the project lifecycle, using appropriate communication channels, regular meetings, surveys, and feedback sessions. This process enhances stakeholder satisfaction, mitigates risks, and improves project outcomes by incorporating their insights into decision-making processes. Experimental studies suggest that the behavioral impact of stakeholder management should be examined from a different perspective, as no study has been done on dynamic stakeholders' behavior. Since actors are dynamic, the choice and use of each actor's method or combination of methods must always be carefully considered[10]. The problem with current participatory research is that when the impact of one or more partner's changes, the analysis and management process need to be reorganized and re-planned from scratch. The studies found that the influence of stakeholders was not static, but dynamic. They suggested that there should be a circular scale on the stakeholders' side. The level of power and importance of participation may change over time[11]. Therefore, in every project, it is beneficial to monitor the stakeholders' interests and need their dynamic feedback to prevent any negative impacts. Many authors have developed different partner analysis tools but have not yet integrated them into a planning framework that can map project phases. The construction projects are subject to some of the most dynamic and predictable factors affecting construction success. Variations come from many sources, such as the work of various construction agencies representing the most important projects in the industry, the availability of resources, the availability of materials, environmental conditions, contract relationships, design transactions, unknown site names, expanding project space and more. Since all these factors affect the success of any construction project, the global construction industry is experiencing difficulties. The most common problems for delays are lack of storage, late delivery, inefficient management system and many other situations that need to be identified. In Iraq, delays in construction are a major problem facing the construction industry, leaving a negative image of the construction industry. These negative results have encouraged many researchers to solve the problem of structural delay[12, 13][14]. Previous research has identified a number of barriers to construction, many of which have had a profound effect on the Iraqi construction industry. conducted an important study that used statistical analysis to determine the causes of delays in community projects but did not consider the relationship between items and delays. As Iraq has experienced rapid growth in all types of construction projects to note that there are significant delays in the success of these projects. Therefore, this study identifies the effect and compares the severity of this feature with other factors of stakeholders.

The study is estimated to identify problems that have contributed to the lack of building materials in the construction work. Identifying the source of the shortage can help control the impact of potential delays on the Iraqi construction industry. Technology in construction industry of Iraqi control of material shortages can lead to future project success due to construction industry of Iraq inventory and demand management, which naturally leads to in construction industry of Iraq control of time and energy to complete projects. This suggests and the objectives that this research may encourage construction industry in Iraq to pursue the genuine potential advantages of using information system. Moreover, the contributions of this study can be summarized by table 2.

Table 2: Research aims to encourage the Iraqi construction industry to utilize information systems for their potential benefits.

To recognize	Positive impact	Stakeholders	On the Iraqi construction industry
To analyze	Positive impact	Communication	On the Iraqi construction industry
To evaluate	Positive impact	Technology	On the Iraqi construction industry
To assess	Positive impact	Cost	On the Iraqi construction industry
To measure	Positive impact	Time	On the Iraqi construction industry
			construction industry
To calculate	Positive impact	Top management	On the Iraqi construction industry
To identify	Positive impact	Local authorities	On the Iraqi construction industry
To analyze	Positive impact	Moderating role of organizational culture in moderating the relationship between the Iraqi construction industry and stakeholders (consultants, clients, contractors, and employees)	On the Iraqi construction industry

1.3. Research significance

1.3.1. Significance to theory

The study proceeds from a growing interest in improving the performance of construction companies around the world, particularly in Iraq to achieve a sustainable impact. As mentioned earlier, Iraq does not yet have effective organizational culture programs to fill the skills gap at the organizational level, and these shortcomings directly affect the competitiveness of Iraqi manufacturing companies operating in worldwide markets. Based on the preceding discussion, it can be concluded that the need to train management skills in the construction industry is a principal problem in the construction industry in Iraq. The results of this study will expand the knowledge available in the field into five theoretical and practical areas.

1. This study will enable construction agents, investors, project managers, lecturers, trainers, human resource development policy makers and construction industry experts to technology in construction industry of Iraqi understand the educational situation of the Iraqi construction industry workers and organizational culture programs.

2. For researchers to understand, this study will be the first of its kind in the Iraqi construction industry. The findings will be in line with existing literature regarding the standard of organizational culture programs in the construction industry, especially in the areas of Iraqi research knowledge.

3. This paper will provide a stakeholder's factors model to identify skills vacancies and organizational culture facilities that can contribute to the growth and development of management skills in the construction industry and serve as a benchmark.

4. This study identifies the main benefits of stakeholder's factors at each job level and at the project company level. By emphasizing the importance of stakeholder's factors, staff development standards, goal technology

in construction industry of Iraq change management, filling skills gaps, cost organizational culture and benefits assessments, learning incentives and administrative support can be improved.

5. This study will present recommendations to leaders of Iraqi companies contracted to address the challenges of today's world. overall, the study will provide important information on the organizational culture needs of a wide range of professionals, human resource development professionals (HRD) and human resource development specialists, lecturers and business leaders and the results are expected to shed light on the organizational culture needs of Iraqi contractors and encourage them to do more research.

1.3.2. Significance to practice

Given the importance of the construction industry, it is very important to ensure the smooth completion of construction projects. However, the industry is cause suffering by production problems such as lack of innovation, slow progress, rework, mistakes, and conflicts, all of which result in high construction costs [6, 15]. Leaving a project is very common and is usually a sign of an accident in the beginning phases of the undertaking. As far as a report, about 2,262 public buildings were abandoned in Iraq. Determining the appropriate project area and project definition during the project planning phase may be the right approach to the problem [16]. While proper planning of pre-finished projects with a well defined project site the possibility of unexpectedly high costs, inadequate project planning and poorly defined sites causes schedule conflicts, budget overruns, rework, and expensive changes, cause defeats for difference projects in project implementation often reflect uncertainties that arise in the early stages [17].

1.4 Theoretical background

1.4.1. The Iraqi construction industry

Iraq crossing Syria to the west, Iran to the east, Kuwait to the southeast, Jordan to the southwest, and Turkey to the north, it is a well-known Middle Eastern nation. The most populous city center is Baghdad, with an area of 168,754 square meters [18]. Iraq has large populous cities like Baghdad and Mosul, economic cities like Basra, Muslim tourist cities like Najaf and Karbala, and tourist cities like Erbil and Dohuk and a population of 43000000. People from many countries travel to Iraq for a variety of reasons, usually investing, tourism, trade [19]. As a result of the reconstruction process, the great demand for construction machinery, equipment, and building materials, especially cement and reconstruction, will continue in the coming years. According to a plan from the Iraqi Ministry, the reconstruction of Iraq [20] will cost about \$ 10.710 billion, and such a large facility will require the continuous supply of various building materials. Domestic production cannot satisfy even 10 percent of the demand, so the construction industry will face a severe shortage of basic materials. The building sector is one of the main contributors to the nation's development and it makes a substantial contribution to the nation's growth and economy. With building projects accounting for over 10% of GDP in the majority of developed and developing nations Thus, enhancing the efficiency of the construction industry [21].

1.4.2. Dependent variable: Iraqi construction industry

The construction industry significantly contributes to the socioeconomic progress of a country. Building operations have a substantial role in the advancement of a country and its overall economic growth, as evidenced by their contribution of approximately 10% of the gross domestic product (GDP) in both developed and developing countries [22]. Hence, enhancing the efficacy of the construction sector will undoubtedly contribute to cost reduction and foster economic expansion. Numerous variables are employed in assessing the influence of a project, including temporal considerations, financial implications, level of excellence, client contentment, and performance within the realm of safety and health [23][24]. Nevertheless, the success of a construction project is contingent upon crucial factors such as price, time, and quality. The achievement of project completion indicates project success, contingent upon specific factors within each allocated budget [25]. Obtain financing for construction projects has proven to be difficult at times due to economic difficulties and financial limitations. This phenomenon has the potential to impede the successful completion of projects or result in time challenges.

1.4.3. Dependent variable: Top management in Iraqi construction industry.

The high-level operational procedures within the Iraqi construction industry's upper system, much like any other industry, encompass a variety of actions with the aim of charting the course, making decisions

of strategic significance, and ensuring the overall efficiency of the organization. This upper management is engaged in critical decision-making at a higher level, which includes choices like identifying significant projects, allotting resources, and endorsing financial plans. These pivotal decisions hold the power to lead the organization's path and success. The top management communicates the company's principles and goals to the entire workforce, guaranteeing that all individuals are in sync with the organization's objectives. The upper management defines the structure of the organization, outlining the sequence of divisions and chains of reporting. They determine how various functions and teams will cooperate to attain shared goals. This is of particular importance in the construction sector due to the inherent risks associated with expansive ventures, such as changes in regulations, disturbances in the supply chain, and unforeseen delays. Efficient interaction with stakeholders, which includes (contractor, consultant, client, and employees), governmental entities, and the public, constitutes a crucial responsibility of the upper management. Ensure that the organization's operations are open and suitable interests of stakeholders. They are engaged in strategic program for the long term, contemplating industry trends, economic variables, and possible avenues for expansion. It is pertinent to acknowledge that the particulars of the upper management procedure can differ from one entity to another based on variables such as company magnitude, configuration, industry sector, and corporate ethos. Furthermore, the sociopolitical and economic background of Iraq will impact how upper management conducts affairs in the construction sector within the nation. Political stability in Iraq affects upper management's ability to plan and execute construction projects, posing uncertainties, delays, security risks, and compliance with government policies and regulations. [26], highlighted is the idea of top management support, pertains to the provision of resources such as material, financial, intellectual, documentation, and human resources to enable the effective accomplishment and delivery of a project by the team. The engagement and active participation of senior company leaders in project endeavors are viewed as expressions of support from top management [27]. Indeed, the absence of backing from higher-level management is commonly cited as a major hindrance to achieving success in the construction sector of Iraq [28, 29]. Comprehending the elements driving actions within construction firms is crucial for stakeholders in the construction sector, including prominent construction experts and managerial staff. Gaining stakeholders' endorsement is imperative for the project's execution, and researchers have noted a scarcity of this support from institutional stakeholders. Addressing noteworthy matters concerning stakeholders of construction industry in Iraq is vital as it a distinctive platform for stakeholders to interact with top management. Moreover, the research identifies key elements that establish a connection between the accomplishment of projects and the overall prosperity of a corporation. Around 63% of the surveyed participants in Iraq indicated that the primary cause behind the nonexistence of a project management methodology stems from the absence of belief and interest among top management in adopting such a methodology. It is crucial for corporations and institutions to gain strong endorsement from higher-level executives to efficiently carry out construction projects. Furthermore, upper management must possess a thorough grasp of the diverse advantages linked with these projects, as this awareness significantly enhances overall profitability in the construction sector. Providing a unique value to stakeholders in construction is a fundamental role of organizational culture. It's essential for individuals to have the capability to meet the demands of predefined projects [30].

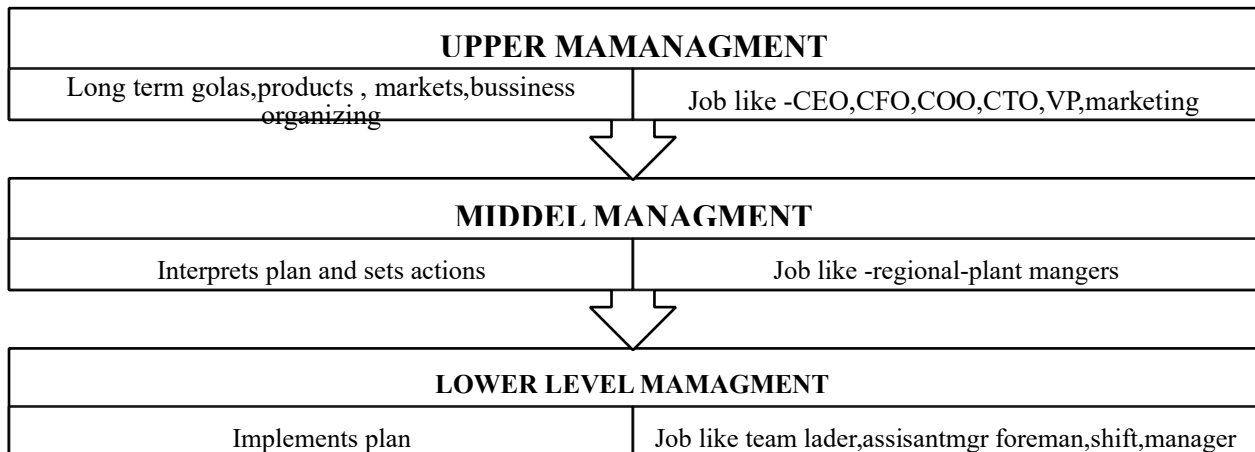


Figure1: The upper management's procedures in the construction industry

1.5.1 Dependent variable: Local authorities in Iraqi construction industry.

The existing body of literature examines the interaction between the construction product market and various economies. The driving forces behind this phenomenon are influenced by various economic factors, inventory availability, population size, creditworthiness, interest rates, and housing prices, encompassing arrears and the likelihood of future trends [31, 32]. Construction companies can face challenges in adhering to complex and dynamic regulatory frameworks. Disputes and legal complexities can potentially lead to project delays and the incurrence of additional costs. Political instability and changes in power may have an impact on the ongoing operation of Iraqi construction projects. The potential for uncertainty and delays could occur for the client as a result of variations in regulatory frameworks. The engagement of local authorities within the Iraqi construction sector typically adheres to a sequence of stages and interactions. For instance, create urban and regional development strategies. Individuals and developers aiming to initiate construction endeavors are required to secure construction permits from these local authorities, local building inspection departments carry out on-site evaluations at various project milestones[33]. local authorities might necessitate an Environmental Impact Assessment (EIA) to standard the potential ecological ramifications of the project. The successful completion of an assessment signifies the conclusion of a project, and relevant certificates may be awarded as a result. It is crucial to stay informed about local construction regulations and engage in active collaboration with pertinent local authorities to ensure the success of a construction project in Iraq. [34].

1.5.2 Independent variable: Different factors that affect to the Iraqi construction industry.

The construction sector plays a crucial role in the progress of a nation, with construction projects significantly contributing to the nation's advancement and overall economic development. In fact, in both highly developed and developing nations, these projects contribute approximately 10% to the gross domestic product (GDP) (31). Hence, raising the efficacy of the construction sector will undeniably yield cost reductions and foster economic expansion. Multiple variables are employed in assessing a project's impact, including but not limited to time, cost, quality, client satisfaction, and performance within the safety and health domain (32). Nevertheless, the success of a construction project is contingent upon several crucial factors, namely price, time, and quality. The successful completion of a project is contingent upon various factors within a specified budget (33). Nevertheless, the execution of construction projects encounters numerous challenges and uncertainties that constrain its efficacy and consequently diminish its overall influence (34). The construction industry encounters various challenges that impact its operations and growth, as it operates both at local and global levels, encompassing activities such as consulting and contract management (35). The project's performance is influenced by various factors, including its unique characteristics, the composition of the project team, and external circumstances such as economic fluctuations, political dynamics, and environmental shifts.

1.5.3. Independent variable: Stakeholders (client, consultant, contractor, employees).

Stakeholder's factors can be categorized into two distinct groups: internal and external [35, 36]. Internal collaborators are individuals or groups within an organization who actively participate in decision-making such as (Client, Consultant, Contractor, Employees). External partners, such as neighbors, the local community, and local authorities, are considered in the context of event planning. Within the construction industry, there has been a notable emphasis on cultivating positive relationships with internal stakeholders, particularly in domains related to acquisition and management. Conversely, the construction and building development field has witnessed the considerable influence of public relations on external relations, albeit to a limited extent, due to the prevailing laws and regulations governing these activities. Contractual disputes and payment issues frequently arise within the Iraqi construction industry i. The resolution of conflicts among project stakeholders can pose challenges for clients. Contractors frequently face delayed payments in Iraq, thereby exerting an impact on their financial liquidity. The occurrence of payment delays from the client or the authority can result in challenges with remunerating subcontractors and suppliers, ultimately causing project delays. Consultants may encounter contractual disputes with clients or contractors pertaining to various aspects of a project, such as the scope of work, allocation of responsibilities, financial remuneration, or expected outcomes. These conflicts have the potential to result

in payment delays or even the termination of projects, thereby affecting the consultant's financial earnings and professional standing. The dearth of employees with substantial expertise the construction industry in Iraq is likely to face a shortage of labor, particularly in specialized areas. The potential consequences of this situation include increased expenses related to employee compensation and potential setbacks in meeting the project's completion deadline[37].

1.5.4. Independent variable: Technological factor in Iraqi construction industry.

The building technology sector is a prominent contributor to production and employment in the worldwide economy. Nevertheless, despite its significance, the construction industry has exhibited subpar performance during the period spanning from 2020 to 2021 evident in the underperformance of construction and construction technology companies in terms of their return on invested capital (ROIC) and earnings before interest and taxes (EBIT), as well as their earnings before interest, taxes, depreciation, and amortization (EBITDA), in comparison to the S&P 500. The delay in achieving stability and price recovery after the 2021 financial crisis can be attributed to elevated sales figures, diminished productivity levels, and the sluggish pace of technological advancements. Access to the latest construction technologies and tools may be limited in some regions of Iraq. Embracing novel technologies typically requires a proficient workforce that can effectively operate and uphold the technology. When there is a deficit of workers possessing the essential skills, it can result in inefficiencies and delays in project completion. The aforementioned factor may impede the widespread implementation of contemporary construction methodologies, which have the potential to enhance operational effectiveness and mitigate costs[38]. Integrating novel technologies frequently demands substantial initial expenditures on hardware, software, training, and infrastructure. For construction enterprises with these expenses can pose as barriers that are difficult to overcome.

1.5.5. Independent variable: Time in construction industry of Iraq.

The Iraqi construction industry, like in any other country, is significantly influenced by the time factor. Time plays a pivotal role in influencing diverse facets of the construction sector., including project planning, execution, costs, scheduling, and overall project management. The timing aspect of construction is of utmost importance in the attainment of national objectives pertaining to social and economic progress, encompassing domains such as housing, infrastructure, and employment. Based on a scholarly analysis, the allocation of time towards construction activities exerts a significant influence on various dimensions of the economy, rendering the construction industry a pivotal catalyst for economic advancement, particularly within developing nations. [39, 40][13]. Time in construction projects are common in many parts of the world, and Iraq is no exception. Factors such as bureaucratic hurdles, political instability, security issues, and changes in regulations can contribute to project delays. These delays can lead to increased costs, contractual disputes, and negative impacts on project stakeholders [41]. Time delays can have a significant economic impact on the construction industry and the overall economy of Iraq. Delayed projects result in increased project costs, as construction materials, labor, and other resources become more expensive over time. Additionally, the delayed completion of infrastructure projects can hinder economic growth and development [42].

The construction industry is a significant source of employment in Iraq time in projects can lead to fluctuating job opportunities for construction workers, contributing to economic instability in the sector. Time impact on Iraqi construction industry can strain relationships between project stakeholders, including contractors, consultants, employees, and clients. These disputes have the potential to result in legal proceedings, elevated project expenditures, and harm to the reputation of all parties involved.

Independent variable: Costs in Iraqi construction industry.

In the construction industry, managing construction expenses to guarantee they remain within the allocated budget is a crucial component of effective project oversight within the construction sector. Therefore, It is imperative to ensure that project cost management remains within the designated budget[43]. The Institute for Project Management 2021 defines project management as the application of knowledge, skills, tools, and techniques associated with project work to meet project requirements. These disputes have the potential to result in legal proceedings, escalated project expenses, and harm to the company's reputation. Funding and economic restraints economic difficulties and financial limitations have

occasionally made it challenging for construction projects to obtain financing and may prevent projects from being completed or cause delays. The variability in the supply and demand of workers can have a significant influence on qualified workers costs, specifically with regards to highly skilled workers [44]. The presence of employee's shortages can potentially result in an increase in wages as a means of attracting individuals with the necessary qualifications. Engage in negotiations with suppliers and subcontractors to secure advantageous contractual agreements that yield competitive pricing.

1.5.7. Independent variable: Communication in Iraqi construction industry.

The construction industry has demonstrated economic viability, and its correlation with economic development has been extensively documented. There have been a multitude of studies.[45] have discussed the role of the construction sector in national economic development. miscommunication negotiations between contractor and client. Project stakeholders may exhibit varying cultural norms and communication styles, which can result in the possibility of misinterpretations and misunderstandings. Ineffectively structured or unproductive project meetings have the potential to result in a deficiency of consensus among stakeholders and impede the advancement of the project [46] .

1.5.8. Moderating variable: Organizational culture in Iraqi construction industry.

The study of organizational culture is a distinct and esteemed research area within the field of management science. It continues to maintain its reputation for its significant impact on the variations observed across various positions within an organizational structure. The significance of organizational culture in the realm of organizations has long been recognized, necessitating scholarly investigation and inquiry to better comprehend its influence on the attainment of organizational objectives. Within the existing body of literature, numerous studies have established a correlation between company culture and organizational efficiency. These studies highlight the need to critically examine the varying interpretations of organizational efficiency within different types of organizational cultures [47]. The discovery of new contextual factors that establish a connection between organizational culture and organizational influence can greatly affect the examined correlation. Numerous phases of the definition of organizational culture exist. Certain organizations may exhibit traditional organizational structures and a significant power distance. The presence of this factor may impede the facilitation of transparent communication to achievement of efficient decision-making processes, thereby resulting in project execution delays and inefficiencies. Diverse degrees of dedication to quality standards may be observed among different organizations. Insufficient prioritization of quality can lead to substandard craftsmanship and the need for rework [48].

2.0. Conceptual framework and hypotheses organizational.

Organizational culture is a prevalent method of structuring work within distinct organizational units, allowing for their segregation. In the field of project management, extensive research has been conducted to identify the key factors contributing to project success.[49]. These factors encompass management support, effective communication, active participation, and informed decision-making, all of which are crucial considerations. The present study examines the cultural dimensions associated with the behavior and technology within the Iraqi construction industry, specifically Organizational culture is a prevalent method of structuring work within distinct organizational units, allowing for their segregation. In the field of project management, extensive research has been conducted to identify the key factors contributing to project success.[49]. These factors encompass management support, effective communication, active participation, and informed decision-making, all of which are crucial considerations. The present study examines the cultural dimensions associated with the behavior and technology within the Iraqi construction industry, specifically focusing on the stakeholder factors that influence the project submission process. The discovery of new contextual factors that establish a connection between organizational culture and organizational influence can greatly affect the examined correlation[50]. In this study, a work-based methodology was employed to examine the organizational culture of an Iraqi construction industry. The elucidations provided by[51]. The utilization of technology within the construction industry in Iraq, as well as the examination of factors influencing the behavior of project stakeholders, is a prevalent practice. Subsequently, the organizational model of the institution underwent a revision to enhance the categorization of cultural art objects. To ascertain the culture of the project organization, it is suggested that the culture be delineated based on the conduct exhibited by the entities

participating in the project process via these technical frameworks. The project stakeholders in technical projects encompass various including clients, consultants, employees, contractors, and top management. However, the primary focus of collaboration lies within key members such as clients, consultants, and contractors. This occurrence is observed or experienced. Thus, the present study delineates the key factors identified by the project organization.

Table3: Phases of variables

Phase 1	An effect of independent on dependent variable
Phase 2	An effect of independent on moderating variable
Phase 3	An effect of moderating on dependent variable
Phase 4	An effect of independent on dependent in the presence of moderating variable

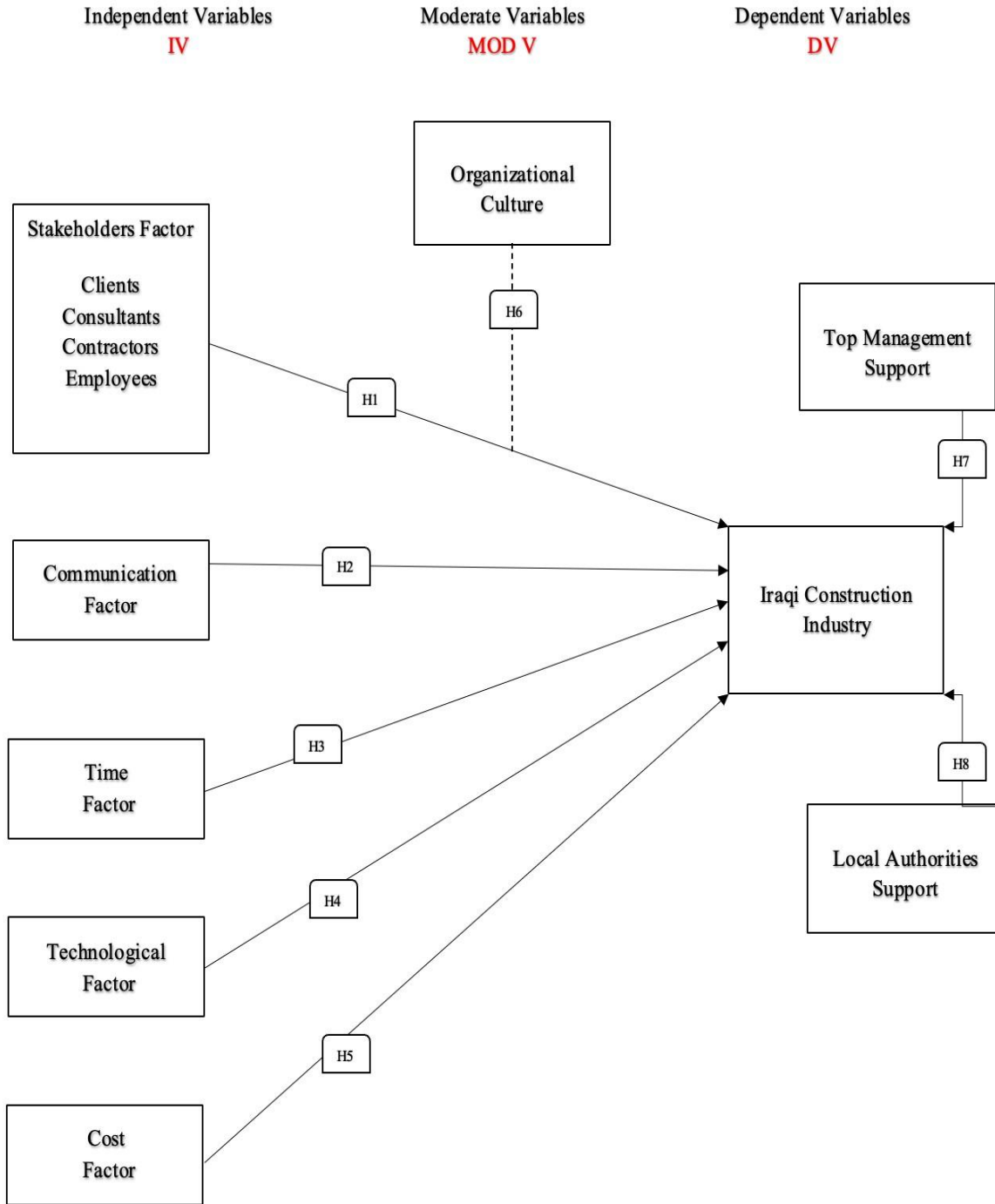


Figure 2. Conceptual framework factors of independent V (H1-H5) and moderation variables (H6) on dependent variable Iraqi construction industry (H7-H8)

effective project management can be achieved through the management of project stakeholders, which can help limit collaborative activities that may negatively impact the project and aid in achieving project goals[52]. Stakeholder managers aim to access different perspectives on various partners, improve communication between partners, and articulate their needs ultimately leading to increased stakeholder satisfaction[53]. defines stakeholder management as effective working relationships[54].

- H1 .According to [55],Stakeholders have an influence on Iraqi construction industry.
 H2 .According to [56],Communication has an influence on Iraqi construction industry.
 H3 .According to [57],Technology has an influence on Iraqi construction industry.
 H4 .According to [58],Cost has a influence on Iraqi construction industry.
 H5 .According to [59],Time has an influence on Iraqi construction industry.
 H6 .According to [60],Top management has an influence on the Iraqi Construction industry.
 H7 .According to [61],Local authorities have an influence on Iraqi construction industry.
 H8 .According to [62, 63],Organizational culture has a influence on moderating the relationship between the Iraqi construction industry and stakeholders .

3.0 Research methodology

3.1. Research design

Research often provides a variety of ways to identify and solve problems, and there are many literatures on the strengths, weaknesses of these methods and their relevance use in solving research questions. Therefore, there are different ways of initiating research design to achieve the objectives and objectives of each research project. According to [64] there are two research methods to solve this problem. A researcher can choose a technique or find the right combination of research methods is important that researchers focus on the problem, not just on the path[65].

3.2. Population

The study included people who were community project managers or who had experience in comanagement of a construction project in Iraqi construction industry (Clients or organizations that start construction projects have responsibility for providing the necessary funding and requirements are referred to as project initiators), Contractors, the main contractors in charge of managing and supervising the whole construction process and they utilize subcontractors and organize the project's different parts, Consultants, they assist with the planning and design of the construction projects, making sure they conform to requirements for performance, safety, Project managers are qualified individuals in charge of the overall planning, scheduling, budgeting, and coordination of projects, Top management, in the construction sector of Iraq typically refers to the senior executives and decision-makers who hold major positions in construction organizations or companies. They oversee managing the organization's overall operations, strategy, and direction. The specific titles and responsibilities may differ from one organization to another, but the following are some typical senior management roles in the Iraqi construction industry. According to [66]. There are two main types of population formation: Probability and non-probability. In the probability model, demographic factors have known probability or probability of choice as the subject of the sample, and the probability sample contains the items. There are no known or specific possibility that important and meaningful samples from the previously described subject panels fall into the following categories. Random samples research information or data collected from community members readily accessible to researchers. Purposive sampling gathering information needed for a specific purpose or population. In this study, random samples (target samples) were selected because the target group was too small. Employees are randomly selected. The target population includes 10 construction companies in Iraq.

3.3. Sampling technique.

The study employs a quantitative approach to gather data, which includes a survey questionnaire administered to construction project practitioners, and therefore, it was necessary to select a limited sample from the population of interest for the purposes of analysis[67, 68] refers to a specific subset of individuals , sample size is a crucial factor to consider. The present investigation utilized a sample size of 368 individuals from a larger population of 9817 staff members. The determination of the sample size formula [69], method for ascertaining sample size in relation to population size. The accuracy of the sample size obtained was established by employing the [70] sample determination table to verify the conclusion of the Moazzam (2014) formula, as illustrated in Table 1. The validity of the sample size of 242 in this study is supported by the estimated sample size of approximately 368 for a population size of 9817, as depicted in table 4.

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Table 4:Determining sample size from given populations [71]

The sample size of the study is 368 although large-size samples are generally recommended for SEM analysis, there is no consensus among researchers on the acceptable limits of SEM use. The sample included employees of contractions companies in Iraq small sample gives different reasons for that [72, 73][74]. In addition, if the model is not very complex, its structure is well defined and theoretically supported and the information is collected from reliable sources a sample size of sufficient for SEM analysis [75]. The questionnaire was used to model the experimental model of the relationship between the variables to obtain the production information of the participant managers. In this study, responses were collected from experienced respondents with relevant expert knowledge who clearly defined the objectives of the study and were considered trustworthy. In addition, the distribution of construction experts among respondents increases the validity of the data, which can be used to evaluate key aspects of the success of construction participant management. The professional background and areas of expertise of the respondents showed that, all with at least 5 years of relevant experience, and more than 78% of respondents with 10 years or more experience. In addition, it is known that all targeted responses work in many companies on projects and should work with or participate with all or more teams. Given the internal difficulty of collecting questionnaire data in a structural management study, even though the features required for targeted responses limit the number of trained respondents are suitable for this study.

3.4. Data collection methods.

The data collection for this study was conducted using a closed questionnaire survey and respondents were given the opportunity to comment independently. The questionnaire is segmented into three distinct sections that include the objectives of the Iraqi Designers' Response Survey. As a general practice, research tools should be tested to measure their reliability and accuracy and to validate data collected. The experimental study was conducted by distributing a questionnaire prepared by a team of

experts from the same field of research to be able to comment on the questionnaire. Eight experts representing the two groups were contacted to assess the data collection for this study was conducted using a closed questionnaire form respondents were given the opportunity to comment independently. The experimental study was conducted by distributing a questionnaire prepared by a team of experts from the same field of research to be able to comment on the questionnaire. The experts representing the two groups were contacted to assess the validity of the questionnaire. The first group is made up of six experts from two governmental and municipal institutions, three united nations and non-governmental organizations and one non-governmental organization (NGO), who are asked to confirm their party affiliation. The second group, consisting of two mathematicians, was asked to determine whether the tools used were mathematically valid and whether the questionnaire was well-designed to provide a link between variability and assessment and gather carefully and evaluate expert opinions and suggestions. All proposed proposals and amendments were discussed with the research director prior to consideration. Ultimately of the process, some minor changes, modifications, and additions to the question were made and a final questionnaire was made. The final stage of the work is the concept of data collection and data analysis in the construction of the research center Onion. Depending on the type of question answered in the study, different strategies and tools can be used to collect and analyze data [76]. Data collection strategies include observation, questionnaire, interviews, assessment data analysis tools will depend on the type of data collected, whether quantity or quality. The key method of data collection was a survey of experienced construction professionals working in the Iraqi construction industry. The questionnaire was simple of quantity, as each question in the questionnaire requires one or more information [77]. The questionnaire used in this study was used primarily to gather information, so respondents had ample opportunity to provide feedback to clarify any information that may have been lost as a result of the questions and options asked. Construction interviews / queries are used to gather quantity information to validate / evaluate the framework.

3.5. Data analysis.

Correlation analysis is used to assess the strengths and characteristics of a linear link between two variables. Depending on the type of data and the rating level, there are different options for the AMOS 26 software. The most common trial options include the Pearson Product Period and the Superman Communication Facility. Pearson's output of the fast-coefficient coefficient depends on the frequency variation or the combination of intermittent intervals and binary variations. Although the cosplay of contact with Superman is related to normal level or measurement information [78]. As the data in this study include continuous line variability on the scale, Pearson's pressure rating coefficient was used to assess the linear relationship between procurement methods and management features to participate in construction projects.

4.0 Results and discussion.

4.1. Descriptive analysis.

Statistical measures that summarize and describe the main characteristics of a dataset offer an overview of the primary attributes of a dataset, encompassing metrics related to its central tendencies, data spread, and additional summary figures that facilitate comprehension of data distribution and characteristics. When determining descriptive statistics for a dataset, you typically calculate the following parameters.

- Minimum: The dataset contains the minimum value.
- Maximum: The dataset contains the highest value.
- Standard Deviation: The square root of the variance, which gauges the extent of data point dispersion.
- Mean (Average): The result of summing all values and dividing the total by the count of values. The questionnaire is categorized to facilitate data dissemination, as the classification of the questionnaire enhances the comprehensibility of the results. the demographic characteristics of a population element of the questionnaire include subsections. The detailed descriptive analysis for all variable is shown below in table 2 and as per the details, Numbers, Minimum, Maximum, mean and Std. deviation are shown.

Table 5: Results of Descriptive Statistics for All Variables

	N	Min	Max	Mean	Std. D
Demographics	368	1.00	5.00	3.6685	1.22146
Stakeholders' factors	368	1.00	5.00	3.8179	1.31311
Communication factors	368	1.00	5.00	3.4674	1.33656
Time factors	368	1.00	5.00	3.0761	1.20610
Technological factors	368	1.00	5.00	3.2418	1.44610
Cost factors	368	1.00	5.00	3.6196	1.29423
Top management support	368	1.00	5.00	3.6223	1.50973
Local Authorities support	368	1.00	5.00	2.6957	1.58494
Organizational culture	368	1.00	5.00	3.6467	1.42771
Iraqi construction industry	368	1.00	5.00	3.6141	1.49222
Valid N (listwise)	368				

4.2. Descriptive statistics for demographics.

As per the three primary categories of descriptive statistics are frequency distribution, central tendency, and dataset variance[79]. The frequency distribution records the number of occurrences of the data, the central tendency records the center point of the data distribution, and the variance of the data set records its popularity. Statistics that are descriptive is a tool for describing specific data features by summarizing data patterns. This is usually presented in the form of a data digest that describes the content of the data. For instance, a census may provide descriptive statistics regarding the gender ratio in a specific urban area. [80] claimed that descriptive statistics can be categorized into measures of central tendency, which summarize the typical value of a dataset, and measures of variance, which quantify the spread or variability of the data. Measures of central tendency encompass the mean, median, and mode, whereas measures of variance encompass, variance, maximum variance, standard deviation, minimum and, skewness and kurtosis. Measures of central tendency and discrete measures are two types of descriptive statistics. The mean, median, and mode are three measures of central tendency. Descriptive statistics for demographics included different demographics details like Gender, Age, Education, Job type and Working experience etc. the total number of participants was 368 and the details are given below in table 6.

Table 6: Demographics

Gender	Rate of occurrence	Percentage
Male	267	72.6
Female	78	21.2
Prefer not to say	23	6.3
Total	368	100.0
Age	Rate of occurrence	Percentage
Below 25 years	77	20.9
26-30	97	26.4
31-35	131	35.6
36-40	29	7.9
Above 40	34	9.2
Total	368	100.0
Education	Rate of occurrence	Percentage
Intermediate	73	19.8
Graduation	97	26.4

Masters	125	34.0
M.Phil.	38	10.3
PhD	35	9.5
Total	368	100.0
Job Type	Rate of occurrence	Percentage
Architect&Engineering	146	39.7
Construction Management	107	29.1
Quality Surveying	57	15.5
Top Management	58	15.8
Total	368	100.0
Working Experience	Rate of occurrence	Percentage
Below 5 years	173	47.0
5-10	195	53.0
Total	368	100.0

Structural equation modeling.

The application of structural equation modeling (SEM) was chosen due to its efficacy as a multivariate technique that is becoming more prevalent in scientific research for the analysis and assessment of multivariate causal relationships. Structural Equation Modeling (SEM) distinguishes itself from other modeling approaches by examining the direct and indirect impacts of causal relationships that were previously assumed. The objective of employing SEM in this study was to establish a theoretical causal model that encompasses anticipated relationships among a group of variables and subsequently verify its alignment with the observed data. [81] It is stated that path analysis determines the relationships between factors and behavioral and/or environmental characteristics. Subsequently, the impacts of various drug varieties on the agent were juxtaposed with the quantified behavioral and environmental conditions.

4.4. Structural model.

A structural model consists of objects in a system and the fixed relationships that exist between them. Groups of objects can be divided into packages or subsystems. An object model diagram defines a structural model. Structural models indicate relationships between latent variables and allow researchers to determine the degree of their relationship (calculated as path coefficients). Ignore other results. Traditional empirical research that provides less formal causality. The structural model represents the framework of the system, and this framework is where all the other components live. Therefore, class diagrams, component diagrams, and site diagrams are part of structural modeling. All of these represent assembly elements and mechanisms. Structural models focus on assessing relationships between variables. Structural model evaluation in AMOS focuses on assessing the significance and relevance of path parameters, followed by the explanatory and predictive power of the model. Partial least squares structural equation modeling (AMOS) is an alternative to the covariance-based SEM method (AMOS), which is more popular when analyzing data using structural equation modeling (AMOS). A structural model consists of objects in a system and the fixed relationships that exist between them. Groups of objects can be divided into packages or subsystems. An object model diagram defines a structural model. This section describes the code generated from the object model graph. If we compare our findings[82][82], then we can find that our values are significant. The view that matrices, correlations, implied covariances, residual and standard values show the strength of mutual relationship of variables from the scale of (-1 to +1). The correlation is weak with (- values) and the correlation are strong with a (+ value) and while analyzing the findings of our variables' relationships, it was found All the variables exhibit positive correlation with each other.

Table 7: Examined Hypotheses and relative regression models.

			Correlation	S.E.	C.R.	P	Label	
Iraqi industry	construction	<---	Local authorities support	.072	.069	1.038	.299	par_1
Iraqi industry	construction	<---	Top management support	-.076	.068	-1.120	.263	par_2
Iraqi industry	construction	<---	Cost factors	-.031	.103	-.302	.763	par_3
Iraqi industry	construction	<---	Technological factors	.008	.088	.095	.924	par_4
Iraqi industry	construction	<---	Time factors	.089	.101	.881	.378	par_5
Iraqi industry	construction	<---	Communication factors	.103	.069	1.492	.136	par_6
Iraqi industry	construction	<---	Stakeholder factors	.019	.070	.266	.790	par_7
Iraqi industry	construction	<---	Organizational culture	.018	.073	.249	.804	par_8
Iraqi industry	construction	<---	Organizational culture <-- Stakeholder factors	.019	.070	.266	.790	par_7

Table 8: Standardized Regression Weights

			Correlation
Iraqi construction industry	<---	Local authorities support factors	.076
Iraqi construction industry	<---	Top management support factors	-.077
Iraqi construction industry	<---	Cost factors	-.027
Iraqi construction industry	<---	Technological factors	.008
Iraqi construction industry	<---	Time factors	.072
Iraqi construction industry	<---	Communication factors	.092
Iraqi construction industry	<---	Stakeholder factors	.016
Iraqi construction industry	<---	Organizational culture factors	.017

Standardized regression weights, also known as beta coefficients, are the coefficients obtained before fitting a regression model when both the dependent and independent variables are standardized. Standardization involves changing the variables. In standardized regression weights provide a measure of the strength and direction of the linear relationship between each independent variable and the dependent variable. Examining the correlation matrix of the independent variables assists in the identification of strong bilateral correlations. High correlations (close to 1 or -1) indicate the possibility of collinearity.

Table 9: Results of collinearity diagnostics

	Estimate	S.E.	P	Label
Local authorities support	2.505	.185	***	par_10
Top management support	2.273	.168	***	par_11
Cost factors	1.670	.123	***	par_12
Technological factors	2.086	.154	***	par_13
Time factors	1.451	.107	***	par_14
Communication factors	1.782	.132	***	par_15
Stakeholder factors	1.720	.127	***	par_16
Organizational culture	2.033	.150	***	par_17
e1	2.181	.161	***	par_18

Multicollinearity means that your model has multiple independent variables. We usually hear that a VIF of around 10 is fine, but only when estimating (if about one independent variable is defined, otherwise the matrix is constant). The R-squared statistic describes the variance of endogenous variables explained by exogenous variables. For example, the R-squared value of the variable Y affected by X1, X2, and X3 is 0.623. The first step in evaluating AMOS results is to test the measurement model. The reflective structure and the associated criteria for forming the structure are different. If the measurement model meets all necessary criteria, researchers need to evaluate the structural model (Hair Jr et al., 2020)(Tran & Tarigan, 2022). For instant the values you have provided, namely "2.273, S.E.168, and P"***", are associated with a variable called "Label par 11. The estimated value is 2.273. Presumably, this is the coefficient value for the variable "par_11" in a regression model. The term "par_11" represents the estimated change in the dependent variable when there is a one-unit change, while keeping all other variables constant. S.E.168: The value shown is probably the standard error linked to the coefficient estimate for the label "par_11." The standard errors serve as a metric for the accuracy or uncertainty of the coefficient estimate. P-value: The p-value is a commonly used measure of statistical significance in various statistical contexts. Indicates that the coefficient estimates for the label "par_11" is highly statistically significant, typically with a p-value below 0.001. Consequently, it can be inferred that the correlation between the variable labelled "par_11" and the dependent variable is improbable to be a result of a random occurrence. To summaries, the coefficient estimates of 2.273 indicates the anticipated alteration in the dependent variable when there is a one-unit modification in the label "par_11." Furthermore, the statistical significance (denoted by the P-value "***") suggests that this association is unlikely to be a result of chance fluctuations.

4.5. Model one of direct effects.

According to studies [85, 86], Predictors of direct impact are quantified in terms of positive and negative values. A positive value indicates a positive and significant direct impact; conversely, if a negative value indicates a negative impact, then the direct impact is considered negative and insignificant, and below are the total effects, while comparing them with the findings of[87], We have found those significant values. Furthermore, organizational culture factors (.018) have a direct impact that is considered a positive variable and significant for the Iraqi construction industry. Stakeholders' factors (0.19): the direct impact is considered a positive variable and significant for the Iraqi construction industry. Communication Factors (.103): The direct impact is considered a positive variable and significant for the Iraqi construction industry. Time factors (.089): the direct impact is considered a positive variable and significant for the Iraqi construction industry. Technological factors (.008) have a direct impact that is considered a positive variable and significant for the Iraqi construction industry. Local authorities support (.072) that the direct impact is considered a positive variable and significant for the Iraqi construction industry. The cost factor (-.031) and the direct impact are considered negative variables and insignificant for the Iraqi construction industry. Top management support (-.076): the direct impact is considered a negative variable and

insignificant for the Iraqi construction industry. Which shows the negative direct impact of these variables on the Iraqi construction industry

Table 10: Direct effects

Iraqi construction industry	Organizational culture factors	.018	Positive	Significant
Iraqi construction industry	Stakeholder factors	.019	Positive	Significant
Iraqi construction industry	Communication factors	.103	Positive	Significant
Iraqi construction industry	Time factors	.089	Positive	Significant
Iraqi construction industry	Technological factors	.008	Positive	Significant
Iraqi construction industry	Cost factors	-.031	Negative	Insignificant
Iraqi construction industry	Top management support factors	-.076	Negative	Insignificant
Iraqi construction industry	Local authorities support factors	.072	Positive	Significant

Table 11: Standardized Direct Effects

Iraqi construction industry	Organizational culture factors	.017	Positive	Significant
Iraqi construction industry	Stakeholder factors	.016	Positive	Significant
Iraqi construction industry	Communication factors	.092	Positive	Significant
Iraqi construction industry	Time factors	.072	Positive	Significant
Iraqi construction industry	Technological factors	.008	Positive	Significant
Iraqi construction industry	Cost factors	-.027	Negative	Insignificant
Iraqi construction industry	Top management support factors	-.077	Negative	Insignificant
Iraqi construction industry	Local Authorities Support factors	.076	Positive	Significant

[88] have claimed that predictors of standard total effects and direct effects are measured through + and – values. If the values are +, then the direct impact is considered positive and significant, if the values are - then the direct impact is considered negative and insignificant and below is shown the total effects and while comparing it we have found that significant values of organizational culture (.017), stakeholders' factors (0.16), communication factors (.092), time factor (.072) technological factors (.008) and local authorities support (.076) which shows that the positive direct impact of these variables on Iraqi construction industry while we have found a negative value of cost factor (-.027) and top management support (-.077), which shows that the negative direct impact of these variables on Iraqi construction industry. For instance, the provided information pertains to a statistical analysis conducted on the Iraqi construction industry. The analysis addresses the variable stakeholder factors and their standardized direct effect. The value (0.016) represents the standardized direct impact of the stakeholder factor variable on a specific outcome variable in the Iraqi construction industry. In this context, the term positive denotes the direction of the effect, indicating that an increase in stakeholder factors is directly associated with a favorable change in the outcome variable in the construction industry in Iraq. The significance indicates that the standardized direct effect is statistically significant. This refers to the observed correlation between stakeholder factors and the Iraqi construction industry in statistics. The stakeholder factors in the Iraqi construction industry have a positive and statistically significant impact on the Iraqi construction industry. The interpretation of the precise magnitude of the effect (0.016) would rely on the contextual factors of the study. The precise objectives of the analysis as well as the variable measurement scales. In addition to the effect's statistical significance, it's critical to take its practical significance.

4.6. Model Two of Indirect Effects

The impact is measured through significance value .000 is ideal value of strong indirect impact and till .005, it is considered positive and if it crosses .005, then it becomes negative and insignificant. Below is show the indirect effects and while comparing it with the findings of [89][90, 91][92].we have found the significant values of organizational culture (.000), stakeholders' factors (.000), communication factors (.000), technological factors (.000) and local authorities support (.000), cost factor (.000), and top management support (.000).

Table 12: Indirect Effects

	Organizational Culture	Stakeholder factor	Communication factor	Time factor	Technological factor	Cost factor	Top management support	Local Authorities Support
Iraqi construction industry	.000	.000	.000	.000	.000	.000	.000	.000

Table 13: Standardized Indirect Effects

	Organizational Culture	Stakeholder factor	Communication factor	Time factor	Technological factor	Cost factor	Top management support	Local Authorities Support
Iraqi construction industry	.000	.000	.000	.000	.000	.000	.000	.000

4.7. Model three of modification indices

The modification index represents the chi-squared value with one degree of freedom. It signifies the extent by which the model's fit would get better if a specific path were introduced or a constraint were relaxed [93]. If the value exceeds 3.84, it suggests that enhancing the model would be beneficial. The predictors of modification indices are measured through the par change value. If par change value is between -1 to +1, then the values are significant and positive, and it crosses the limit then the values are negative and insignificant. Stakeholder factor has positive modification indices value for communication factor with par change value is significant and positive (.936). Time factors have positive modification indices value for organizational culture with par change values is significant and positive (.896). Technological factors have positive modification indices value for organizational culture with par change value is significant and positive (.605). Technological factors have positive modification indices value for time factors with par change value is significant and positive (.925). Cost factors have positive modification indices value for organizational culture with Par change value is significant and positive (.279). Cost factors has positive modification indices value for time factors with par change value is significant and positive (.589). Cost factors have positive modification indices value for technological factors with par change value is negative and insignificant. (1.364). Top management support factors have positive modification indices value for time factors with par changevalue is significant and positive (.798).Top management support factors have positive modification indices value for technological factors with par change value is significant and positive (.461).Top management support factors has positive modification indices value for cost factors with par change value is significant and positive (.525).Local authorities support factors has positive modification indices value for organizational culture with par change value is significant and positive (.851).Local Authorities support factors has positive modification indices value for technological factors with par change value is significant and positive (.337).Local authorities support factors has positive modification indices value for cost factors with par change value is significant and positive (.911).Local

authorities support factors has positive modification indices value for Top management support factors with par change value is significant and positive (.969)

Table 14: Modification Indices (M.I.) Par Chang (Stands for-parameter change)

			M.I.	Par Change
Communication factors	<-->	Stakeholder factors	105.014	.936
Time factors	<-->	Organizational culture	99.959	.896
Technological factors	<-->	Organizational culture	31.642	.605
Technological factors	<-->	Time factors	103.683	.925
Cost factors	<-->	Organizational culture	8.389	.279
Cost factors	<-->	Time factors	52.489	.589
Cost factors	<-->	Technological factors	195.918	1.364
Top management support factors	<-->	Time factors	70.828	.798
Top management support factors	<-->	Technological factors	16.447	.461
Top management support factors	<-->	Cost factors	26.617	.525
Local authorities support	<-->	Organizational culture	52.136	-.851
Local authorities support	<-->	Technological factors	7.987	.337
Local authorities support	<-->	Cost factors	72.843	.911
Local authorities support	<-->	Top management support	60.549	.969

4.7. Moderating analysis

To examine the effects of a hypothesis, we conducted an experiment to explore moderation methods. [94]. The relation is studied from stakeholders (consultants, clients, contractors, and employees) to organizational culture to Iraqi construction industry. The mediation path must be significant. stakeholders' organizational culture-Iraqi construction industry. If any of such paths are deemed insignificant, then this model does not exhibit any mediation effect. We will systematically examine all possible paths to determine whether our theory is refuted or confirmed, and whether the hypotheses we have formulated are accepted or rejected. While comparing the table with [95, 96]. The moderating effect analysis is started from correlation, and the correlation value is seen positive or negative. While analyzing our findings, we can see that correlation between organizational culture and stakeholder factor is estimated with estimate value of (.008) which is strong correlation [97]. A moderating analysis, estimate values is considered positive or negative and based on estimate value moderating effect is decided to be accepted or rejected. If estimate value is negative, then the moderating effect is rejected and if estimate value is positive then, moderating effect is accepted. While analyzing our findings, we can see that correlation between Iraqi construction industry and organizational culture and is estimated with estimate value of (.036) which is strong correlation [98]. We can see that impact of stakeholder factor on organizational culture is estimated with estimate value of (.008) which is strong correlation. The impact of organizational culture on Iraqi

construction industry is estimated with estimate value of (.036) and the impact of stakeholder factor on Iraqi construction industry is estimated with estimate value of (.0080), which is strong correlation.

Table 15: Moderation analysis of organizational culture (stakeholders to Iraqi construction industry)

			Correlation	Label
Organizational culture	<---	Stakeholder factors	.008	W3
Iraqi construction industry	<---	Organizational culture	.036	W1
Iraqi construction industry	<---	Stakeholder factors	.0080	W2

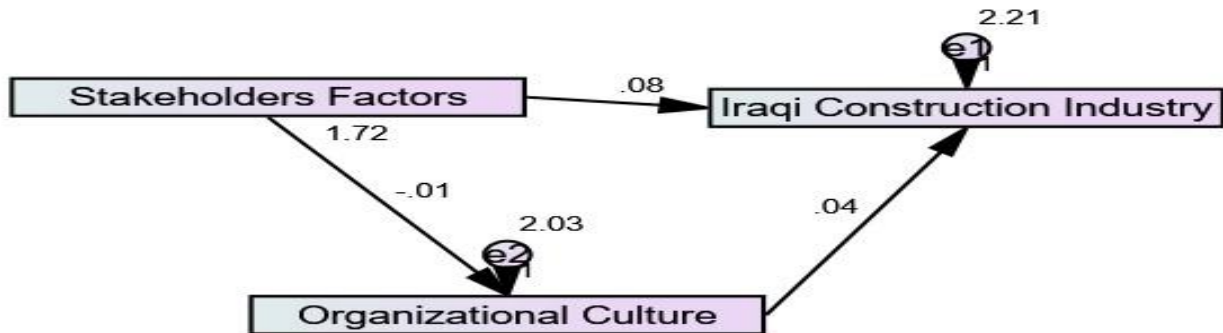


Figure 4. Moderating model (SEM) - AMOS 26 software

4.9. The Final Framework or Model (Result)

A framework is an intermediary entity situated between "model" and a "method". A framework is consisting of a system or structure (not fully described) used to achieve a specific outcome/objective. Most frameworks include one or more models, which are Using the modeling techniques as a foundation described above and are often based on (best) practices. A framework describes the components, dimensions, and directions of research before a researcher's methodological approach, while a model is a theoretical concept that emphasizes the dimensions and components of empirical research. In statistics, a model is a set of one or more variables and their possible interactions that researchers use to explain changes in the dependent variable. [96] ,claimed that if a hypothesis is in accepted state, then the P value will be 0.000 and if it is not 0.000, then the hypothesis will be rejected, and we can see from the table below that our hypothesis is accepted. Studies [99, 100][101], claimed that indirect impact is measured through significance value 000 is ideal value of strong indirect impact and till .005,standard deviation of 0.004 is considered good.

Table 15: Summary of final model fit values

Construct	Impact	Significant	P values
Stakeholders-> Iraqi construction industry	Direct	.001	0.000
communication->Iraqi construction industry	Direct	.001	0.000
Time->Iraqi construction industry	Direct	.002	0.000
Technological factor->Iraqi construction industry	Direct	.001	0.000
Cost->Iraqi construction industry	Direct	.001	0.000
Top management support->Iraqi construction industry	Direct	.003	0.000
Local authorities-support>Iraqi construction industry	Direct	.002	0.000
Stakeholders > Organization culture>Iraqi construction industry	Moderating	.001	0.000

The data collected underwent analysis and the study has found an influence of stakeholders on Iraqi construction industry with a significance value of (Sig .001). The study has found an influence of

communication on Iraqi construction industry with a sig value of .001. The study has found an influence of technology on Iraqi construction industry with a sig value of .001. The study has also found an influence of cost on Iraqi construction industry with a sig value of .001. In terms the study has found an influence of cost with a sig value of .001, The study has also found an influence of top management support on Iraqi construction industry with a sig value of .003. The study has found an influence local authorities support on Iraqi construction industry with a sig value of .002. The study of the relationship was found an influence with sig.001 and moderating role of organizational culture was also found in the relationship between Stakeholders and Iraqi construction industry.

5.1. Findings

Table 17: Findings

	Sig value	P Value
There is direct and positive impact of stakeholder's factors on Iraqi construction industry.	.001	0.000
There is direct and an influence of communication factor on Iraqi construction industry.	.001	0.000
There is direct and an influence of time factor on Iraqi construction industry.	.002	0.000
There is direct and an influence of technological factor on Iraqi construction industry.	.001	0.000
There is direct and an influence of cost factor on Iraqi construction industry.	.001	0.000
There is direct and an influence of top management support on Iraqi construction industry.	.003	0.000
There is direct and an influence of local authorities on Iraqi construction industry.	.002	0.000
There is moderating and an influence of organizational culture on in the relationship between stakeholders' factors and Iraqi construction industry.	.001	0.000

5.2. Discussion

A positive impact of stakeholders on the Iraqi construction industry was recognized in the study, which determined that this impact had a statistically significant value of (Sig.001). The results of this study correlate with those of previous research and existing scholarly works. According to a study by [102], In the last three decades, numerous researchers have established a positive correlation between the construction industry and the factors affecting stakeholders. It was suggested that factors related to stakeholders have an effect on the construction industry. by [103, 104][105], various factors of interest to stakeholders. Subsequently, construction projects were among the numerous industrial sectors that heavily utilized the concept. To support and quantify the accomplishment, stakeholder factors are utilized. to ensure the success of construction projects through the utilization of both strategic and tactical approaches to implementation. Desperate contractors are consequently unable to meet present deadlines. The second problem is pre-payment processing also takes time numerous prerequisites must be achieved, such as advance compensation deposits and somewhat complicated bureaucracy, which make contractors reluctant to accept advances. The third problem is lack of manpower is the main reason for delay in building construction due to agricultural and harvest seasons. To assess the beneficial effects of communication on the Iraqi construction sector and this relationship has been found significant and positive with a sig value of .001. This study has confirmed the findings of previous literature. The construction industry is an economic asset and has a good relationship with economic growth. Several previous studies [106] discussed the contribution of the construction sector to the economic development of the Iraq country. The construction sector plans, constructs, remodels, repairs, renovates, and demolishes buildings, and is involved in

engineering and other structures. Some people say that the stability and sustainable development of a country must attach great importance to the construction industry which is influenced by communication. Communication encompasses various modalities, such as oral (in-person and remote, e.g., over the phone), nonverbal (interpreting nonverbal signals, e.g., body language), written, visual (e.g., infographics), and visual cues. Each of these communication tools holds significance, and it is crucial to comprehend their importance and possess the ability to utilize them proficiently. With a sig value of 0.01, it has been determined that technology has a positive effect on the construction industry in Iraq. Prior research asserted that time and poor value for currency have consistently been significant challenges in the construction sector, the results of this study corroborate these findings. A study from Iraq, revealed client financial problems, slow communication between parties, material price discrepancies, poor site management and payment problems from contractors in construction projects in Iraq. Cost overruns are the main reason [107]. An extensive literature review was conducted, and 74 general factors were included [108]. In order to evaluate the beneficial influence of cost on the Iraqi construction industry and the results have revealed a significant relationship with a sig value of .001. The study has confirmed the findings of majority of previous studies. A study from Iraq, revealed client financial problems, slow communication between parties, material price discrepancies, poor site management and payment problems from contractors in construction projects in Iraq. To measure the positive impact of time on Iraqi construction industry and the analysis revealed a positive impact with a sig value of .003. The study has confirmed the findings of majority of previous literature. The main findings of the study are:

1. Macroeconomics has a significant impact on the cost of construction projects.
2. Of all the factors that increase costs, management factors are the ones that are easy to control and avoid because they are internal.
3. The commercial and regulatory environment is inefficient and requires fundamental change, and scientifically proven methods, tools, and techniques should be used instead of traditional practices. To calculate the positive impact of top management on Iraqi construction industry and the results found a positive relationship with a significance value of .002. It was found that project activity in the construction sector in Iraq remains very low [109]. The planned completion time of the education sector project was 45 months, but the actual completion time was 68 months. Also, the planned period for the completion of the health sector project was 32 months, but this project was completed in 64 months. The average planned completion time for public sector projects was 39 months, but the actual completion time was 66 months [110]. To identify the positive impact of local authorities on Iraqi construction industry and the relationship found to be positive with a sig value of .001. Upon comparing it with prior literature, it became evident that the current phase in Iraqi society presents an opportunity for every community, institution, and individual to contribute to shaping the country's future. Legal and financial environment for self-help, self-management, and housing reconstruction. A special municipal law was drafted for the FUNACOM special purpose fund, defining the roles and responsibilities of self-management. The opposition party that won the 1993 elections has no plans to continue self-rule. However, as noted [111] the program itself received extensive media coverage during the Habitat 2 summit in Istanbul, and the technical committee considered it one of "Brazil's best practices. to analyze moderating role of organizational culture on moderating the relationship between the Iraqi construction industry and stakeholders (consultants, clients, contractors, and employee and the relationships has been found to be strong with a sig value of .001. The general approach to purchasing construction projects in Iraq, as well as in many other countries, can be described using a model known as the "triangle system". Organizations today need appropriate and competent leadership to ensure their success in the marketplace. In addition to personal qualities, there are also some culture-specific leadership qualities. This may include leadership vision, motivational skills, good decision making, and a willingness to change what is right for the organization. On the other hand, [112] argues that there is little empirical research to support the contention that organizational culture affects firm efficiency. They argue that this concept is mainly created by managers of organizations and management researchers.

5.3. Conclusion

The analysis and discussion of the study have revealed that there is a lack of organization in the construction industry in Iraq and that the majority of those in claim to have no knowledge or understanding of sustainable practices, quality, sustainability, health and safety, and employment opportunities. In this

study, the presence of the two main issues in the industry—lack of awareness and sensitivity towards sustainable development, and the requirement for a higher initial investment in green buildings—is demonstrated through a comprehensive analysis of survey data and case studies. The research explores the attitudes and practices within the industry, revealing a general lack of awareness and insufficient consideration for sustainable development principles. Additionally, through examining various green building projects, the study provides evidence supporting the notion that such projects often demand a greater initial investment compared to conventional construction. The findings are derived from empirical data and examples, establishing a foundation for understanding and addressing these industry challenges. However, the issue does not end at that point. Illegal construction activities continue to persist in Iraq, with developers able to evade fines and contravene regulations, resulting in adverse repercussions. Every construction project is distinct and intricate, commencing with precise criteria and substantial investment, exertion, and meticulous planning. However, only a limited number of projects achieved success in accordance with the original plan. The construction industry serves as a catalyst for economic expansion in the nation, fostering connections and job prospects for other sectors. Over the past five years, the construction industry has made a consistent contribution of approximately 7–10% to the global economy. The construction industry has accounted for approximately 8–9% of Iraq's GDP over the past five years. The Iraqi construction industry exhibits a high level of complexity, fragmentation, and a significant lack of regulation. An efficient and effective workforce is a critical concern for the industry. Given the distinctive characteristics of the enterprise, continuous considerations revolve around strategic planning, punctual execution, and dependability. The construction industry plays a significant role in the advancement of any nation and holds great importance in generating employment opportunities in Iraq. However, it is frequently observed to decrease because of various internal and external factors. Nevertheless, the primary factors that significantly impede the progress of construction projects are time delays and cost overruns. The evaluation of construction performance can be based on factors such as the rate of progress, the cost of completion, the level of productivity, and the safety of the work carried out. This is the primary factor contributing to the incomplete status of numerous projects and the subsequent transition of developers to new projects. Gaining comprehension of the impacts and variables that influence lead time and cost overruns is crucial. One of the primary objectives of a construction manager or project manager is to successfully finish a construction project within the designated timeframe and allocated budget.

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