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IDENTIFICATION OF CRITICAL CHALLENGES HINDERING EFFECTIVE STAKEHOLDER ANAGEMENT IN CONSTRUCTION PROJECTS

İnşaat Projelerinde Paydaş Yönetimini Etkileyen Kritik Engellerin Belirlenmesi

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ÖZ

İnşaat sektörü, küresel ekonominin temel bileşenlerinden biri olup birçok alt sektörü kapsayan geniş bir endüstridir. Türkiye gibi gelişmekte olan ülkelerde inşaat sektörü, ekonomik büyümeye önemli katkılar sağlamaktadır. Bu sektör, yüksek istihdam kapasitesi, proje bazlı çalışma yapısı, yüksek sermaye gereksinimi ve yüksek risk içermesinin yanı sıra çok sayıda paydaşın ve sürecin bir arada yönetildiği dinamik bir yapıya sahiptir. Bu nedenle, inşaat projelerinde etkin paydaş yönetimi büyük önem taşımaktadır. Bu bağlamda, etkin paydaş yönetimi, inşaat projelerinin başarısını doğrudan etkileyen kritik bir faktör olarak öne çıkmaktadır. Belirtilen nedenle, Türk inşaat sektöründe faaliyet gösteren şirketler için paydaş yönetimi stratejileri büyük önem taşımaktadır. Ancak, bu stratejilerin etkili bir şekilde belirlenebilmesi için etkin paydaş yönetimini engelleyen kritik engellerin tespit edilmesi gerekmektedir. Bu çalışmanın amacı, Türk inşaat sektöründeki paydaşların, paydaş yönetimiyle ilgili yaşadıkları sorunları belirleyerek etkin paydaş yönetimini engelleyen kritik engelleri ortaya koymaktır. Bu amaç doğrultusunda, sistematik literatür taraması sonucunda yapı üretim sürecinde etkin paydaş yönetimini engelleyen 69 olası engel belirlenmiş ve bu kriterlerle anket formu oluşturulmuştur. Hazırlanan anket, Türk inşaat sektöründe aktif olarak görev yapan ve önemli birer paydaş olan mimar, inşaat mühendisi, malzeme tedarikçisi ve müteahhitlerden oluşan örneklem grubuna çevrimiçi ve yüz yüze uygulanmıştır. Araştırma kapsamında, ülke genelinde 164 proje paydaşından veri toplanmış ve elde edilen verilere nicel analizler uygulanmıştır. Yapılan analizler sonucunda inşaat projelerinde etkin paydaş yönetimini engelleyen kritik engeller belirlenmiştir. Türk inşaat sektöründe paydaş yönetimini engelleyen kritik engellerin belirlenmesipaydaş yönetiminde yaşanan sorunların minimize edilmesine katkı sağlayacak ve inşaat projelerinde daha başarılı ve sürdürülebilir bir yönetim sürecinin oluşturulmasına olanak tanıyacaktır.

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ABSTRACT

The construction sector is one of the fundamental components of the global economy and represents a vast industry encompassing numerous sub-sectors. The construction sector in developing countries like Turkey significantly contributes to economic growth. This sector is characterized by high employment capacity, project-based work structure, high capital requirements, and high risks, as well as the necessity to manage multiple stakeholders and processes simultaneously within a dynamic framework. Therefore, effective stakeholder management is of great importance in construction projects. In this context, effective stakeholder management emerges as a critical factor that directly influences the success of construction projects. For this reason, stakeholder management strategies are highly significant for companies operating in the Turkish construction sector. However, to establish these strategies effectively, it is essential to identify the critical challenges that hinder effective stakeholder management. This study aims to identify the critical challenges hindering stakeholder management in the Turkish construction industry. A systematic literature review was conducted to achieve this objective, identifying 69 potential challenges that impede effective stakeholder management in the construction process. Based on these criteria, a survey form was developed. The survey was administered online and face-to-face to a sample group of architects, civil engineers, material suppliers, and contractors, all actively participating as key stakeholders in the Turkish construction sector. Data were collected from 164 project stakeholders nationwide as part of the research, and quantitative analyses were applied to the collected data. “Inappropriate selection of contractors and subcontractors,” “Insufficient skills and qualifications of workers,” and "Lack of experience and competence between contractors and subcontractors” are determined as the most critical three challenges impeding stakeholder management. Revealing the critical challenges of stakeholder management will enable a more prosperous and sustainable management process in construction projects.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

1. INTRODUCTION

A stakeholder is defined as an individual, group, or organization that can influence or be affected by the objectives, activities, and outcomes of a project, program, or organization (Oppong et al., 2017). Stakeholder management is a process aimed at helping stakeholders identify, negotiate, and achieve their social, environmental, and economic goals by ensuring their active participation in the project process (Pajunen, 2006). According to Bryson (2004), stakeholder management involves strategically and systematically managing an organization's relationships with its stakeholders. This process includes analyzing stakeholders' expectations and interests, establishing effective communication, and guiding interactions to align with the organization's objectives.

Effective stakeholder management helps businesses reduce risks, gain a competitive edge, and achieve sustainable growth (Carroll & Shabana, 2010). Notably, the construction industry is one area where stakeholder management is especially important, given its uncertainty, multiple stakeholders, and complex structure (Winch, 2010). Chan et al. (2004) state that the construction sector is a vital part of the global economy, encompassing a wide range of projects from infrastructure to residential buildings. Winch (2010) highlights that construction projects are highly dynamic due to large budgets, long timelines, and the involvement of various stakeholder groups. Although the importance of stakeholders and stakeholder management in construction projects is often stressed, failure to manage stakeholders is a common challenge faced in the industry (Olander, 2007). Ignoring stakeholder impacts can lead to major issues such as project delays, increased costs, legal problems, and social conflicts (Olander & Landin, 2005).

It is well known that a lack of effective communication and information sharing among stakeholders, poor conflict management, and failure to meet stakeholder expectations significantly contribute to the failure of construction projects (Bourne, 2005). Differing interests and expectations among stakeholders lead to conflicts, complicating project management (Bourne & Walker, 2005; Olander & Landin, 2005). According to the PMBOK Guide published by the Project Management Institute (PMI) (2021), successful management of stakeholder interests and expectations is crucial for maintaining steady project progress. Therefore, understanding the critical challenges that hinder stakeholder management is vital for project success. Research indicates that effective stakeholder management enhances project

processes and fosters a more sustainable and efficient business model across the industry (PMI, 2021).

Moreover, understanding the impact of stakeholders during exceptional circumstances, such as the COVID-19 pandemic, illustrates the necessity for robust stakeholder engagement mechanisms. Najib et al. (2022) note that stakeholder actions significantly affect the sustainability and successful progression of construction projects, particularly amid crises that challenge the typical operational frameworks of the industry. The dynamic nature of stakeholder influences underscores the importance of timely and responsive engagement practices, which can mitigate risks and enhance project resilience (Ebekozien et al., 2023).

The significance of fulfilling stakeholder needs throughout the project lifecycle cannot be overstated. Ali et al. (2025) emphasize that stakeholder satisfaction—pertaining to meeting expectations—is a crucial determinant of overall project success. A study by Ebekozien et al. (2023) corroborates this, indicating that poorly managed stakeholder interests often lead to project delays and budget overruns, highlighting the need for systematic stakeholder management processes. Furthermore, effective stakeholder relationship management has been pointed out as a means to navigate the fragmentation and complexity typical of construction projects, as outlined by Taimu et al. (2020).

According to the Turkish Contractors Association (TCA, 2021), the Turkish construction sector plays a vital role in driving economic growth and development. It draws attention to significant infrastructure projects, urban transformation works, and public-private sector collaborations. However, intense competition, financing problems, and legislative changes appear to be important factors affecting the success of projects (Korkmaz & Messner, 2008). Yılmaz and Bakış (2015) stated that the sustainability of construction projects in Turkey depends on the effectiveness of stakeholder management processes. Ünal and Ünal (2015) drew attention to the importance of stakeholder management in the Turkish construction industry and examined the effects of stakeholders on project success. They stated that accurate analysis of stakeholders is a critical factor for completing projects on time and keeping costs under control. Tanyer et al. (2019) discussed how stakeholder expectations should be managed in large-scale construction projects and stated that management in Turkey's construction projects is generally inadequate. Erdem (2015) argued that increasing the participation of stakeholders in the processes and ensuring this through an effective management strategy is decisive in project success. Yıldırım and Çalışkan (2020) stated that stakeholder management has become more

complex, especially in public and private sector projects. They examined how this is reflected in the projects' planning, budgeting, and timing elements.

The studies mentioned above examine the importance of stakeholder management in construction projects in Turkey and its impact on project success from various perspectives. However, a gap still exists in the literature regarding the identification of critical challenges hindering effective stakeholder management in the Turkish construction industry. Therefore, this study aims to identify the critical challenges that impede effective stakeholder management in construction projects. Knowing the challenges that hamper stakeholder management in the construction industry will enable the development of effective stakeholder management strategies. In this context, the questionnaire organized through a systematic literature review was applied to the sample group determined within the scope of the study, and data were collected from the participants. The obtained data were analyzed using quantitative methods.

2. MATERIAL AND METHODS

This study employs a mixed-methods approach, combining qualitative and quantitative analyses. A systematic literature review was used within the qualitative framework, while statistical analysis was utilized in the quantitative context. The method consists of multiple stages and is examined across four dimensions. These stages include conducting a systematic literature review, developing a survey questionnaire based on the findings of the literature review, administering the survey to the sample group, statistically analyzing the collected data, and evaluating the results (Figure 1).

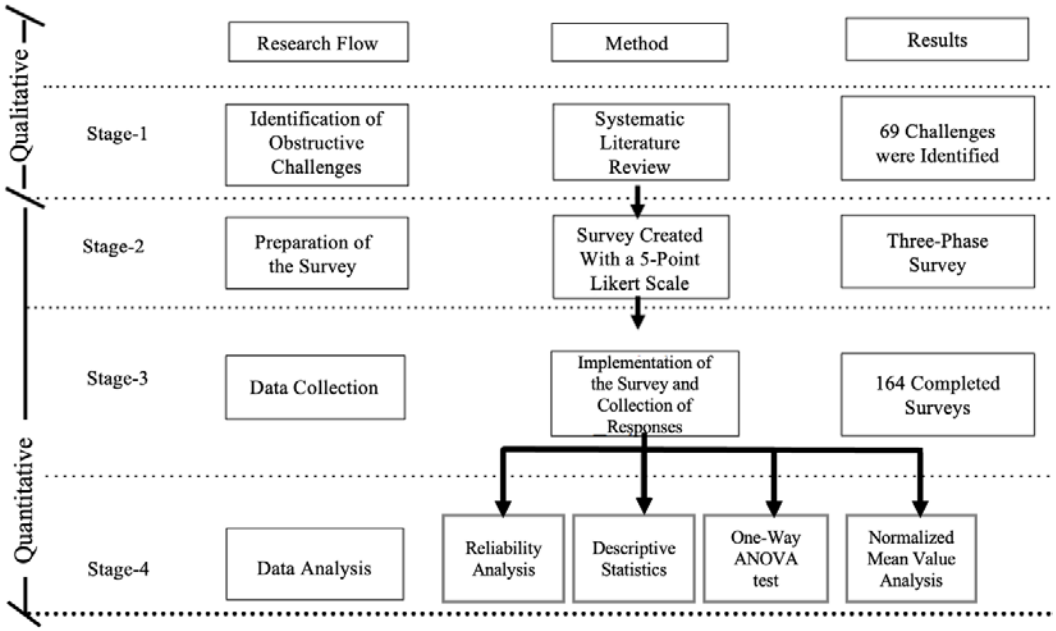

Figure 1. Flowchart of the research method
Şekil 1. *Araştırma yöntemi akış şeması*

2.1. Defining the Potential Challenges with Systematic Literature Review

A Systematic Literature Review (SLR) is a research method in which original studies on a specific subject are thoroughly examined, and the findings are evaluated by carefully reviewing them using exclusion and inclusion criteria (Aslan, 2018). This method helps researchers to systematically collect previous studies on a particular subject, examine them comprehensively, and draw meaningful conclusions. The SLR is a critical tool in scientific research, enabling the acquisition of reliable and valid findings. It provides a transparent, unbiased, and reproducible data collection process. This method is designed for critical evaluation of literature and data collection (Liberati et al., 2009).

Within the study, the 'Web of Science (WoS)' was preferred as the research database due to its accuracy, comprehensiveness, high-quality studies, and extensive international scientific data (Yu et al., 2020; Valderrama-Zurian et al., 2015; Hong and Chan, 2014). The research language was determined as "English" to access more data in the search.

The search was conducted using the keywords "stakeholder management" AND "construction industry" OR "construction projects" within the "architecture" category, covering the period from 2000 to 2024. In the initial phase of the search, 4,988 studies were identified. Within the screening scope, 4988 studies were reached in the first stage. To determine the studies that should be excluded from the research within the scope of the exclusion and

inclusion, the titles, abstracts, and keywords of the 4988 studies obtained were first scanned and among these studies, 4877 did not have content relevant to the research topic, did not have full access and were not in English were excluded.

In the second phase, the remaining studies were read as full text. Studies that were out of scope, not within the scope of the research topic and research questions, and not directly related to all the keywords defined for the research were excluded from the studies whose full texts were read. As a result, 35 studies were evaluated to create the item pool. Following detailed readings, 69 challenges affecting effective stakeholder management were identified. The impact areas of the identified items were considered in classifying the challenges. The obtained challenges, their corresponding codes, and relevant literature sources are presented in Table 1.

Table 1. Criteria in the questionnaire and references in the literature
Tablo 1. *Ankette yer alan kriterler ve literatürdeki kaynakları*

Codes of challenges (SMC)	Challenges	References
SMC1	Lack of trust among stakeholders	[1], [2], [3], [4], [5], [6], [9], [16], [19], [21], [22], [29], [35]
SMC2	Ineffective communication between stakeholders	[1], [2], [5], [16], [20], [21], [22], [23], [24], [27], [28], [29], [30], [31], [32], [33], [34], [35]
SMC3	Poor coordination among project participants	[1], [3], [4], [6], [16], [17], [21], [22], [23], [24], [26], [27], [28], [29], [32], [34], [35]
SMC4	Conflicts of interest between key stakeholders	[3], [6], [7], [22], [25], [27], [29], [32], [33], [34], [35]
SMC5	Disputes between project stakeholders	[3], [5], [6], [16], [21], [22], [23], [24], [27], [29], [30], [32], [33], [34], [35]
SMC6	Lack of commitment by project stakeholders	[3], [6], [7], [26], [29], [35]
SMC7	Lack of experience and competence among contractors and subcontractors	[1], [3], [4], [5], [6], [8], [9]
SMC8	Insufficient skills and qualifications of workers	[3], [4], [6]
SMC9	Insufficient professional knowledge and ability among consultants	[1], [8], [9]
SMC10	Poor organizational structure and management competence of project teams	[1], [3], [4], [5], [6], [21], [26], [27]
SMC11	Inappropriate selection of contractors and subcontractors	[1], [8], [9]
SMC12	Lack of qualified professionals and managers	[5], [6], [8]
SMC13	Ineffective decision-making processes and slow decision-making	[1], [2], [3], [4], [5], [10], [18], [21], [29], [30], [32], [33]
SMC14	Delays in approval and handover processes	[2], [3], [5], [10], [18], [27], [29], [33]
SMC15	Uncertainty and lack of responsibility in problem-solving	[1], [3], [5], [18], [21], [27], [34]
SMC16	Lack of professional responsibility	[1], [3], [5]
SMC17	Delays of owners in solving problems	[1], [3], [5], [20]
SMC18	Constant change of subcontractors	[1], [5], [8]
SMC19	Lack of alternative subcontractors	[1], [2], [5]

SMC20	Lack of long-term relationships with suppliers	[2], [5], [8]
SMC21	Bureaucracy in the organization of the owner	[5], [8], [9], [11], [20]
SMC22	Poor business integration between owner, consultant, and contractor	[5], [8], [9], [18], [20]
SMC23	Lack of an on-site quality management system	[8], [9], [11], [22]
SMC24	Lack of stakeholder participation in the formulation of business policies	[12], [13], [14], [17], [24], [25], [26], [27], [29]
SMC25	Issues with the choice of stakeholder leadership	[12], [13], [14], [22], [23], [26], [27], [29], [31], [35]
SMC26	Lack of awareness, interest, and motivation	[5], [8], [9], [12], [22], [25], [27], [29]
SMC27	Lack of support and commitment from management and owners	[8], [9], [12]
SMC28	Resistance to change and conservative attitudes	[5], [8], [9], [22], [26], [27], [29]
SMC29	Lack of responsive and ethical behavior	[5], [9], [12], [16], [22], [24], [27]
SMC30	Changes made by the customer and high demands from customers	[3], [4], [12]
SMC31	Privacy policies of project stakeholders	[3], [4], [12], [19], [22], [27], [29], [31], [34], [35]
SMC32	High demands on the environment, safety, and time by the owner	[1], [3], [6], [19]
SMC33	Transfer of uncertain or unready construction sites to contractors	[3], [8], [12]
SMC34	Stakeholder fatigue and engagement style (active and proactive)	[3], [8], [12], [17], [21], [22], [23], [24], [25], [26], [28], [29], [31], [35]
SMC35	Political/social instability	[1], [2], [3], [4], [5], [6], [29]
SMC36	New regulations by local governments (taxes, labor, safety, waste, environment)	[1], [3], [4], [6], [22], [27], [29]
SMC37	Bureaucratic and complex procedures	[2], [3], [5], [27], [29]
SMC38	Excessive approval procedures	[3], [4], [6], [27], [29]
SMC39	Workers' strikes	[3], [4], [5], [6]
SMC40	Contract disputes and terminations	[1], [2], [5], [6], [19]
SMC41	Incomplete or unclear contract terms	[2], [4], [6], [19]
SMC42	Poor contract management	[1], [3], [5], [19]
SMC43	Construction process that violates local laws and regulations	[1], [6], [15]
SMC44	Ecological damage	[1], [6], [15]
SMC 45	Poor data accuracy and unwillingness to save data	[1], [6], [15], [30], [31]
SMC46	Customers' impact on data (privacy concerns)	[1], [6], [15], [30]
SMC47	Poor data sharing and storage mechanisms	[1], [6], [15], [30], [31]
SMC48	Vague descriptions of information and documents	[1], [3], [5], [30], [31]
SMC49	Delays in document approval by consultants or owner-representatives	[3], [5], [12], [18], [27]
SMC50	The owner's unclear stance on the project scope, specifications, cost, and schedule	[1], [4], [6], [18]
SMC51	Unnecessary variation orders in project design and specifications	[1], [4], [6], [19]
SMC52	Different uses and purposes of data by customers and contractors	[1], [5], [15]
SMC53	Low-quality goods and services from suppliers and subcontractors	[1], [2], [5], [8]

SMC54	Supply deficiencies in the transportation and delivery of materials, equipment, and labor	[1], [2], [8]
SMC55	Material shortages and inadequate suppliers	[1], [5], [8]
SMC56	Quality defects in building materials	[1], [5], [6]
SMC57	Inefficiencies in material use and resource management	[5], [6], [8]
SMC58	Design changes in the project	[1], [2], [3], [5], [6], [10], [18]
SMC59	Inconsistent scale of the project	[2], [3], [5], [10], [18]
SMC60	Frequent design changes and mistakes made by designers	[1], [3], [5], [6]
SMC61	Lack of clear definition of terms such as construction cost	[1], [4], [5], [10], [15]
SMC62	Local financing and payment problems, lack of available funding	[1], [5], [10], [15]
SMC63	Lack of fiscal incentives, regulations, and government support	[2], [3], [8]
SMC64	Lack of technological resources, skills, and knowledge of the supplier or subcontractor	[1], [5], [10], [15]
SMC65	Shortage of technical staff	[5], [10], [15]
SMC66	Language barriers and translation issues	[1], [2], [9], [27]
SMC67	Cultural differences and misunderstanding of personal values and beliefs	[1], [2], [9], [27]
SMC68	Defective monitoring and control systems for quality, cost, and time	[1], [2], [6], [31]
SMC69	Wrong attitudes of workers on quality, cost, environment, safety, etc	[1], [2], [6], [19]

References: [1] Wang et al., (2019); [2] Zhou, (2023); [3] Nguyen, (2020); [4] Zhang, (2014); [5] AL-Fadhali, (2022); [6] Sanda, (2022);[7] Ebekozien et al., (2023); [8] Ali & Haapasalo, (2023); [9] Liu et al., (2023); [10] Al Nahyan et al., (2019); [11] Tao Yu, (2019); [12] Ekung, (2014); [13] Molwus, (2016); [14] El-Sawalhi & Hammad (2015); [15] Shakantu et al., (2022); [16] McAllister, (2013); [17] Ebekozien, (2012); [18] Kamalirad, (2020); [19] Khoshnavaa, (2020); [20] Zwikael et al., (2022); [21] Hammad, (2015); [22] Abdul Rafeh, (2023); [23] Menoka Bal, (2013); [24] Jing Yangc, (2010); [25] Yang, (2014) [26] Yang et al.,(2020); [27] Olander & Landin, (2005); [28] Rowley,(1997); [29] Mok et al., (2017); [30] Shen, (2009); [31] Xue et al., (2020); [32] Yang et al., (2011); [33] Li et al., (2012); [34] El-Gohary et al., (2006); [35] Mok et al., (2015)

2.2. Research Population and Sample Group

The research universe includes architects, civil engineers, contractors, and suppliers, who are significant stakeholders in the Turkish construction industry.

The questionnaire prepared within the study's scope was applied to the sample group, which was determined by simple random sampling, both online and in-person.

The questionnaire form prepared during the data collection process was delivered to 20 branches of the TMMOB Chamber of Architects and 26 branches of the Chamber of Civil Engineers throughout Türkiye. In addition, a digital questionnaire was sent to 30 procurement companies and 21 members of the Contractors Association via e-mail. An in-person survey was conducted with 30 contracting companies. The stakeholders of the construction sector who answered the questionnaire until this date constituted the study's sample group.

2.3. Organizing Questionnaire and Data Collection

The first section of the survey was designed to assess the participant's level of knowledge about Stakeholder Management Challenges (SMC). The second section of the survey contains questions related to the 69 SMC obtained from the SLR, which are measured using a 5-point Likert scale.

The final section contains eight questions to identify the participant's demographic characteristics (gender, age, educational background, profession, organization, field of work, job position, years of experience in the profession, and years of service in the organization).

The survey forms were administered to the sample group both online and in person. Participants had access to the survey from August 23, 2024, to November 22, 2024. During this period, data were collected from 87 online surveys and 83 face-to-face surveys, resulting in 170 participants. Six of the 170 survey forms were excluded due to completely missing data. In total, 164 surveys were analyzed as part of the research.

In this research, a random sampling approach was implemented to ensure that each member of the target population had a known and non-zero chance of being selected. This technique, which is widely utilized in construction-related studies, is recognized for its effectiveness in generating representative samples while reducing the likelihood of voluntary response bias (Gamil et al., 2020). Accordingly, this method was deemed appropriate for selecting the study participants. The sample size determination was carried out using a procedure derived from the work of Gamil et al. (2020), as illustrated in Equation1. Drawing on findings from a systematic literature review (SLR) focused on barriers to successful stakeholder management, a structured questionnaire was subsequently developed and administered to the selected sample group.

$$SS = \frac{Z^2 \times P(1-P)}{C^2} \quad \text{(Equation 1)}$$

where:

SS: Sample size

Z= Z value (1.96 for 95 percent confidence level)

P=percentage picking a choice, expressed as a decimal (0.5 used for sample size needed)

and

C=margin of error (9 percent), the maximum estimation error, which can be 9 or 8 percent.

$$SS = \frac{1.96^2 \times 0.5(1-0.5)}{0.09^2} = 118.57 \approx 119\ (as\ the\ minimum\ sample\ size)$$

The formula outlined by Enshassi and AlSwaity (2015) is utilized to evaluate the marginal error value. The maximum margin of error for a 95% confidence level is almost equal to 1.96 over the square root of $\approx \frac{1.96}{\sqrt{SS}} = \frac{1.96}{\sqrt{119}} = 0.18 > 0.09$. The margin is considered acceptable, with a minimum size requirement of 119. In the context of this study, a sample size of 164 can be regarded as adequate within this framework.

Table 2 gives the percentage and frequency distributions of the demographic characteristics of the sample group, which consisted of 164 respondents who responded to the survey.

Table 2. Percentage and frequency distributions of demographic characteristics of the sample group
Tablo 2. *Örneklem grubunun demografik özelliklerinin yüzde ve frekans dağılımları*

Demographic Variables		**Frequency (f)**	**Percent (%)**
Gender	Female	56	34.1
	Male	108	65.9
Age	20-30	64	39.0
	31-38	56	34.1
	39-46	24	14.6
	47-54	12	7.3
	55 and over	8	4.9
Educational Background	Primary/Secondary Education	14	8.5
	High school	25	15.2
	Undergraduate/University	95	57.9
	Master	28	17.1
	Ph.D.	2	1.2
Profession	Architect	61	37.2
	Civil Engineer	44	26.8
	Contractor	29	17.7
	Supplier	30	18.3
Type of company	Public Institution	12	7.3
	Private Company	152	92.7
Work Site	Office	34	20.7
	Site	13	7.9
	Office + Construction Site	117	71.3
Position in the company	Administrator	109	66.5
	Employee	55	33.5

Working time in the construction industry	1-5 years	51	31.1
	6-10 years	52	31.7
	11-15 years	25	15.2
	16-20 years	16	9.8
	21 years and older	20	12.2

2.4. Data Analysis

The reliability of the questionnaire was measured using Cronbach's Alpha coefficient. When Cronbach's Alpha values exceed 0.70, the variables are considered to have an acceptable level of consistency and reliability (Cronbach, 1951).

In the following data analysis stage, the descriptive statistics of the data were analyzed. In quantitative analyses, it is essential to determine whether the data set has a normal distribution (Şenyiğit & Bayram, 2021). The kurtosis and skewness values of the relevant variables were calculated to determine whether the obtained data showed a normal distribution. Within the scope of descriptive statistics of the data set, whose normality distribution status was determined, the mean and standard deviation values of 69 SMC were calculated.

ANOVA, a parametric statistical method, is used to evaluate whether there are significant differences among the means of three or more groups. The simplest form, known as one-way ANOVA, enables comparisons across multiple population means (Hesamian, 2016). In this research, ANOVA tests were applied to determine whether different respondent groups shared similar views on the barriers to effective stakeholder management.

Following the descriptive analysis, an NMVs analysis was employed for each of the 69 challenges to identify the critical ones using Equation 2:

$$Normalized\ mean\ value = \frac{(mean\ of\ challenge\ -\ lowest\ ranked\ mean)}{(highest\ ranked\ mean\ -\ lowest\ ranked\ mean)} \qquad (2)$$

Any challenge with an NMV greater than 0.5 meets the critical challenge (CC). Many researchers have used this method of ranking analysis to classify critical factors, such as Liao and Teo (2017), and Zhao et al. (2015), however, this method has not been used to evaluate the CCs for stakeholder management ever.

3. RESULTS

3.1. Reliability Analysis

In this study, a reliability analysis was conducted to measure the internal consistency of 70 questions asked based on perception, using a 5-point Likert scale. Cronbach's alpha coefficient (α) was used for the reliability analysis. As a result of the analysis, the Cronbach's alpha coefficient was calculated as 0.979. The high alpha value (α> 0.90) indicates that the internal consistency of the data set is excellent (Polat et al., 2017).

3.2. Opinions of the Sample Group Regarding the Implementation Level of Effective Stakeholder Management in the Turkish Construction Sector

One of the study's objectives is to determine the level of stakeholder management in the Turkish construction sector. In line with this aim, Table 3 presents the responses provided by the participants to the questions asked of the sample group. Table 3 presents the percentage, frequency, standard deviation, and mean values of the responses to the question aimed at determining the sample group's opinions regarding the implementation level of effective stakeholder management in the Turkish construction sector.

Table 3. The opinions of the sample group on the level of effective stakeholder management in the Turkish construction sector.
Tablo 3*. Örneklem grubunun Türk inşaat sektöründe etkin paydaş yönetimi düzeyi ile ilgili görüşleri*

Level of stakeholder management in the Turkish construction industry	**Frequency**	**Percentage (%)**	**Mean ($\bar{X}$)**	**Standard Deviation**
	f	**%**	**$\bar{X}$**	**σ**
Not active at all	20	12.2		
Minimally Active and Used	62	37.8		
Moderately Active and Used	56	34.1		
It is sufficiently effective	20	12.2	2.57	0.979
Used Very Effectively	6	3.7		
Total	164	100		

When the values presented in Table 3 are examined, a significant portion of the sample group, 84.1% (12.2 + 37.8 + 34.1), indicated that effective stakeholder management is not implemented in the Turkish construction sector.

3.3. Normality Analysis

The skewness and kurtosis values of the data set were examined to determine whether the obtained data had a normal distribution. In this context, the skewness and kurtosis values of the data between -3 and +3 indicate a normal distribution (Brown et al., 1999). The results of the normality test for the dataset are given in Table 4. According to the values in Table 4, the skewness and kurtosis values of all variables in the dataset fall between -3 and +3. In other words, the data set was determined to have a normal distribution.

3.4. One-way ANOVA test

The sample group were categorized into four groups: 'architects,' 'civil engineers,' 'contractors,' and 'material suppliers.' Since the data followed a normal distribution, a one-way ANOVA test was carried out at a 5% significance level to identify potential differences in perspectives among these groups based on the average ratings of 69 identified challenges. The resulting significance values from the ANOVA analysis are presented in Table 4.

The majority of the items yielded one-way ANOVA significance values above the 0.05 threshold, suggesting that architects, civil engineers, contractors, and material suppliers generally shared similar views on the importance of the challenges. However, for specific items—namely SMC13, SMC26, SMC28, SMC32—the significance values were below 0.05, indicating notable differences in perceptions among the respondent groups. To further investigate these discrepancies, post hoc analyses were performed. Subsequent post hoc analyses were carried out to identify the specific respondent groups that exhibited differences in views of the sample group. Table 4 displays the outcomes of the Tukey post hoc tests, which revealed significant differences in viewpoints, particularly between the 'architects vs. contractors', 'civil engineers vs. contractors', and 'architects vs. civil engineers' groups."

Table 4 shows that architects provided statistically meaningful higher mean responses than contractors for “Ineffective decision-making processes and slow decision-making,” and “Lack of awareness, interest, and motivation,” In other words these challenges are more influential on and restrictive to architects than contractors for successful stakeholder management in construction industry.

Furthermore, both architects and civil engineers provided statistically meaningful higher mean responses than contractors for “Resistance to change and conservative attitudes.”

Finally, architects provided higher mean responses than civil engineers for “Transfer of uncertain or unready construction sites to contractors.”

3.5. Critical Challenges Hindering Stakeholder Management in Turkish Construction Projects

To identify the critical challenges of successful stakeholder management in the Turkish construction industry, Normalized Mean Value (NMV) analysis was conducted. The results of the analysis are presented in Table 4.

Table 4. The percentage and frequency distributions, comparison of means and NMV analysis of challenges

Tablo 4. *Engellerin yüzde ve frekans dağılımları, ortalama karşılaştırması ve normalize edilmiş ortalama değerleri*

Codes of Challenges	Skewness	Kurtosis	Total Mean	Standard Deviation	Architects' Mean	Civ. Engineers' Mean	Contractors' Mean	Suppliers' Mean	One-Way ANOVA test	NMV
SMC1	-0.636	0.148	3.80	0.978	3.80	3.98	3.69	3.93	0.562	0.730*
SMC2	-0.715	0.454	3.88	0.923	3.98	4.00	3.66	4.00	0.263	0.802*
SMC3	-0.775	0.242	3.94	0.970	4.00	4.00	3.79	4.11	0.684	0.856*
SMC4	-0.673	-0.075	3.85	1.026	3.88	3.93	3.72	4.11	0.853	0.775*
SMC5	-0.551	-0.375	3.83	1.025	3.88	3.78	3.90	4.11	0.868	0.757*
SMC6	-0.841	0.209	3.86	1.042	3.81	4.05	3.59	4.25	0.373	0.784*
SMC7	-1.283	1.386	4.10	1.025	4.23	4.34	3.76	4.54	0.065	1.000*
SMC8	-1.105	0.742	4.10	1.038	4.15	4.37	3.68	4.39	0.096	1.000*
SMC9	-1.085	0.915	4.03	1.009	3.97	4.27	3.93	4.14	0.583	0.937*
SMC10	-0.989	0.549	3.99	1.033	4.00	4.17	3.83	4.14	0.616	0.901*
SMC11	-1.104	1.078	4.10	0.967	4.25	4.22	3.83	4.32	0.166	1.000*
SMC12	-0.915	0.393	4.03	0.956	4.05	4.29	3.90	4.25	0.248	0.937*
SMC13	-0.523	-0.344	3.76	1.040	4.02	3.78	3.34	3.89	0.024*a	0.694*
SMC14	-0.435	-0.430	3.73	1.011	3.87	3.93	3.48	4.04	0.058	0.667*
SMC15	-0.761	-0.154	3.94	1.038	4.17	3.95	3.79	4.18	0.097	0.856*
SMC16	-1.096	0.604	4.03	1.059	4.12	4.24	3.93	4.14	0.258	0.937*
SMC17	-0.961	0.470	3.96	1.015	4.03	4.02	3.66	4.00	0.251	0.874*
SMC18	-0.912	0.126	3.86	1.145	4.05	3.66	3.62	3.96	0.185	0.784*
SMC19	-0.812	0.166	3.81	1.094	3.97	3.76	3.45	3.96	0.101	0.523*
SMC20	-0.491	-0.421	3.57	1.091	3.53	3.54	3.55	3.79	0.635	0.604*
SMC21	-0.342	-0.604	3.66	1.032	3.71	3.66	3.52	3.96	0.822	0.766*
SMC22	-0.800	0.140	3.84	1.083	3.83	4.05	3.69	4.14	0.533	0.685*
SMC23	-0.894	0.359	3.75	1.099	3.67	4.05	3.66	4.00	0.540	0.649*
SMC24	-0.717	0.062	3.71	1.039	3.70	4.05	3.55	3.89	0.125	0.459
SMC25	-0.503	-0.418	3.50	1.108	3.72	3.56	3.14	3.89	0.104	0.459
SMC26	-0.574	-0.507	3.50	1.157	3.82	3.54	3.21	3.96	0.012*a	0.369
SMC27	-0.471	-0.348	3.40	1.094	3.53	3.54	3.31	3.57	0.263	0.477
SMC28	-0.582	-0.180	3.52	1.056	3.77	3.85	2.96	3.79	0.000*a,b	0.631*
SMC29	-0.693	-0.231	3.69	1.141	3.90	3.93	3.34	4.07	0.052	0.766*
SMC30	-0.725	-0.046	3.84	1.033	3.95	3.93	3.66	3.86	0.568	0.297
SMC31	-0.296	-0.621	3.32	1.139	3.23	3.54	3.28	3.54	0.790	0.459
SMC32	-0.551	-0.313	3.50	1.141	3.71	3.61	3.24	3.54	0.167	0.667*
SMC33	-0.741	-0.174	3.73	1.146	4.07	3.54	3.62	3.82	0.027*c	0.667*
SMC34	-0.454	-0.363	3.40	1.083	3.68	3.29	3.21	3.64	0.069	0.369
SMC35	-0.365	-0.671	3.39	1.186	3.63	3.27	3.43	3.46	0.241	0.360
SMC36	-0.693	-0.411	3.75	1.171	3.74	3.88	3.59	3.78	0.869	0.685*
SMC37	-0.848	-0.206	3.76	1.222	3.93	3.85	3.72	3.81	0.536	0.694*
SMC38	-0.908	0.197	3.90	1.103	4.00	3.98	3.79	4.04	0.718	0.820*
SMC39	-0.102	-1.006	3.12	1.255	3.03	2.88	3.21	3.00	0.209	0.117
SMC40	-0.680	-0.265	3.71	1.132	3.78	3.61	3.76	3.79	0.767	0.649*
SMC41	-0.824	0.140	3.85	1.069	3.92	3.85	3.62	3.79	0.514	0.775*
SMC42	-0.829	0.272	3.81	1.063	3.90	3.80	3.55	3.89	0.570	0.739*
SMC43	-0.753	-0.083	3.78	1.123	3.85	3.75	3.64	3.96	0.787	0.712*
SMC44	-0.273	-0.743	3.28	1.165	3.34	3.22	3.41	3.46	0.711	0.261
SMC45	-0.450	-0.427	3.58	1.048	3.61	3.56	3.55	3.82	0.939	0.532*

SMC46	-0.340	-0.759	3.35	1.173	3.46	3.29	3.45	3.57	0.663	0.324
SMC47	-0.322	-0.528	3.26	1.116	3.39	3.39	3.21	3.57	0.182	0.243
SMC48	-0.563	-0.234	3.50	1.096	3.59	3.49	3.52	3.79	0.755	0.459
SMC49	-0.732	0.243	3.66	1.061	3.68	3.80	3.52	3.82	0.629	0.604*
SMC50	-0.659	-0.020	3.69	1.020	3.83	3.85	3.55	4.00	0.122	0.631*
SMC51	-0.775	0.120	3.69	1.107	3.81	3.80	3.41	3.61	0.285	0.631*
SMC52	-0.406	-0.484	3.55	1.095	3.78	3.63	3.31	3.93	0.070	0.505*
SMC53	-0.978	0.529	3.82	1.088	3.92	4.00	3.62	4.04	0.248	0.748*
SMC54	-0.623	-0.242	3.73	1.083	3.92	3.66	3.59	3.93	0.338	0.667*
SMC55	-0.692	-0.222	3.86	1.059	3.93	3.71	3.93	4.04	0.614	0.784*
SMC56	-0.785	0.078	3.81	1.086	3.95	3.83	3.66	4.04	0.695	0.739*
SMC57	-0.892	0.409	3.89	1.024	3.98	3.98	3.79	4.18	0.659	0.811*
SMC58	-0.810	0.071	3.77	1.103	4.00	3.73	3.52	3.68	0.102	0.703*
SMC59	-0.502	-0.532	3.73	1.075	3.98	3.71	3.50	3.82	0.152	0.667*
SMC60	-0.719	0.176	3.81	1.016	3.97	3.78	3.55	3.89	0.240	0.739*
SMC61	-0.664	-0.326	3.69	1.136	3.90	3.80	3.62	3.93	0.057	0.631*
SMC62	-0.853	-0.163	3.83	1.167	4.05	3.95	3.59	4.21	0.085	0.757*
SMC63	-0.708	-0.447	3.65	1.245	3.69	3.76	3.52	3.93	0.804	0.595*
SMC64	-0.903	0.214	3.74	1.148	3.78	3.76	3.79	4.21	0.935	0.676*
SMC65	-0.940	0.381	3.87	1.095	3.83	4.02	3.76	4.36	0.811	0.793*
SMC66	-0.004	-0.968	3.01	1.237	3.05	3.05	2.90	3.21	0.871	0.018
SMC67	0.012	-1.032	2.99	1.255	3.10	3.07	2.86	3.29	0.619	0.000
SMC68	-0.401	-0.551	3.52	1.119	3.71	3.51	3.48	3.93	0.186	0.477
SMC69	-0.386	-0.567	3.69	1.060	3.73	3.85	3.55	4.15	0.567	0.631*

* denotes critical challenge
a: Significant mean difference between architect-contractor
b: Significant mean difference between civil engineer-contractor
c: Significant mean difference between architect-civil engineer

Following the NMV analysis, it was found that 16 of the 69 challenges (SMC25, SMC26, SMC27, SMC28, SMC31, SMC32, SMC34, SMC35, SMC39, SMC44, SMC46, SMC47, SMC48, SMC66, SMC67, SMC68) had normalized mean values below 0.5 and were thus excluded from the study. The NMV analysis showed that 53 of the 69 challenges had normalized mean values above 0.5, indicating they are considered critical barriers (Table 5). When two or more impacts had similar mean scores, the impact with the lower standard deviation was ranked the highest. A smaller standard deviation (SD) indicates less variation between responses and a more reliable mean (Staplehurst and Ragsdell, 2010). Among these, SMC7, SMC8, and SMC11 had the highest NMV at 1.000. The most critical challenge is the inappropriate selection of contractors and subcontractors (SMC11). Other significant challenges that hinder effective stakeholder management include the lack of experience and competence among contractors and subcontractors (SMC7) and insufficient skills and qualifications of workers (SMC8).

4. DISCUSSION AND CONCLUSION

Stakeholder management is of great importance due to the complex structure of the construction sector, the diverse interests of the parties involved in the project, and the high risks associated with project execution. The construction sector encompasses a wide range of stakeholders, including project owners, contractors, subcontractors, suppliers, regulatory bodies, community groups, and end-users, each with different needs, expectations, and levels of influence. Effectively managing these stakeholders is critical to project success by aligning

interests, minimizing potential conflicts, and enhancing collaboration throughout the project life cycle. Knowing the obstacles to stakeholder management is essential to managing stakeholders in the building production process effectively. In this context, determining the challenges that hinder stakeholder management in construction projects will encourage cooperation for effective stakeholder management, reduce conflicts, increase project performance, and positively contribute to the economic and social structure of the communities in which they operate.

The results of this study highlighted that some challenges had one-way ANOVA significance level. In the context of the Turkish construction industry, the perception of challenges faced with stakeholder management varies significantly between architects and contractors, particularly concerning decision-making processes and stakeholder engagement. Research indicates that architects tend to report higher mean responses than contractors regarding issues related to ineffective decision-making processes and stakeholder engagement difficulties. One underlying reason for this discrepancy may be attributed to the differing roles and responsibilities of architects compared to contractors within project dynamics. Architects are often more involved in the conceptual and design phases of construction projects, focusing on design integrity and aesthetic relevance. This leads them to emphasize the importance of timely and effective decision-making, which is critical for achieving high-quality project outcomes. Consequently, architects might perceive slow decisions and ineffective processes more acutely, as these hinder their ability to fulfill design commitments and project visions. In contrast, contractors, who primarily engage during the execution phase, might prioritize operational efficiencies and cost-related issues over the speed of decision-making.

Furthermore, the engagement and motivation levels among stakeholders' impact project delivery and success. Architects may feel that a lack of engagement from clients and other stakeholders, such as local governing bodies, can significantly impede their design and project goals. Research acknowledges that ineffective stakeholder management affects project success, with suggestions that architects, who often advocate for design and sustainability, may be particularly sensitive to the perceived gaps in stakeholder motivation and engagement. However, contractors may not prioritize these factors as heavily, viewing them through the lens of contractual obligations and service delivery, which can lead to lower perceived severity regarding stakeholder engagement.

The differences in reported challenges could also stem from educational and professional backgrounds, as studies suggest architects typically receive rigorous training in stakeholder engagement, collaboration, and innovation. These aspects influence their perspectives on the importance of awareness and motivation in stakeholder dynamics. Furthermore, the cultural and operational landscapes within the Turkish construction sector may contribute to these variances. For instance, environments characterized by hierarchical decision-making may see architects struggling more with slow decision-making processes compared to contractors, who might adapt their strategies to the given workflow and organizational structure.

Both architects and civil engineers in the Turkish construction industry report higher mean responses than contractors regarding "Resistance to change" and conservative attitudes," which is significant challenge that hinder stakeholder management. The underlying reasons for this phenomenon can be attributed to the inherent differences in the professional roles, educational backgrounds, and focus areas of these stakeholders in comparison to contractors.

Architects and civil engineers typically engage in more design-oriented and innovative aspects of construction projects, requiring flexibility and adaptive problem-solving. Studies highlight that these professionals often face substantial barriers when attempting to implement new technologies and processes, leading to increased resistance to change within their disciplines. They are expected to integrate modern design principles and sustainable practices into their projects. In contrast, contractors tend to operate within a more traditional framework that emphasizes execution based on established protocols and methodologies. This rigid adherence to conventional practices can contribute to a more conservative attitude toward change, as contractors may prioritize short-term project deliverables over innovation (Vennström & Eriksson, 2010).

Moreover, the conservative mindset prevalent in the construction industry, characterized by a preference for established methods and skepticism towards new practices, plays a significant role in the observed resistance from architects and engineers. The literature discusses how attitudinal barriers, including adversarial perspectives and a focus on immediate outcomes, contribute to the inertia observed in the sector (Vennström & Eriksson, 2010). Architects and civil engineers, accustomed to design flexibility and innovation, may perceive this conservative attitude more acutely as a challenge, resulting in higher mean responses regarding resistance to change.

Educational factors further elucidate this difference in perception. Architects and civil engineers are trained to be adaptive thinkers, typically integrating a mindset that combines creativity with problem-solving. This background fosters a greater awareness of the limitations posed by resistance to change, leading them to advocate for evolving practices that promote stakeholder engagement and project success. In contrast, contractors often focus on practical execution, which can lead to less emphasis on addressing philosophical and operational resistance to change (Okoye & Odesola, 2020).

Additionally, projects in the Turkish construction sector frequently face institutional inertia due to regulatory frameworks and traditional procurement protocols, complicating efforts by architects and civil engineers who seek to innovate and implement changes in stakeholder management processes (Szentes & Eriksson, 2013). The intersection of these professional responsibilities, educational training, and industry practices creates differing perceptions of resistance to change, resulting in architects and civil engineers reporting greater challenges compared to their contractor counterparts.

The Turkish construction industry exhibits a notable distinction between the responses of architects and civil engineers concerning the challenges faced in the "Transfer of uncertain or unready construction sites to contractors." This difference in perception can largely be attributed to the unique roles and responsibilities assigned to each professional group, their emphasis on design quality, and their involvement during the project's early phases.

Architects typically play a crucial role during the initial stages of a project, where site feasibility and design integrity are of paramount importance. Their responsibilities often encompass evaluating site readiness and environmental conditions that could influence construction outcomes. Consequently, architects may highlight the significant repercussions that uncertain or unready sites can have on design and execution, reflecting their heightened sensitivity to such issues in survey responses. While exact studies confirming this direct claim were not found, the role of architects in design and feasibility phases is well documented in the literature discussing integrated design and construction processes.

On the other hand, civil engineers may approach challenges associated with uncertain sites from a more solution-oriented perspective, focusing on practical engineering methods for project execution. Their work, which often centers on structural integrity and safety compliance, might shape their perception of site-related issues differently than architects. Civil engineers frequently devise strategies to manage site uncertainties during the construction

phase, which may lessen the urgency of concerns regarding site readiness compared to architects, who are primarily engaged in the project's early development stages.

The results of this study show that 53 of the 69 challenges hindering effective stakeholder management in the Turkish construction industry are critical.

When examining the normalized mean value analysis and ranking of the challenges that hinder effective stakeholder management, three critical challenges were identified are:

“Inappropriate selection of contractors and subcontractors (SMC11)”

"Insufficient skills and qualifications of workers (SMC8)"

"Lack of experience and competence between contractors and subcontractors (SMC7)"

The most critical challenge, “Inappropriate selection of contractors and subcontractors” This issue directly impacts project outcomes, stakeholder satisfaction, and overall project success. Several studies have identified that the contractor-subcontractor relationship is crucial for maintaining smooth project execution, as the performance and reputation of main contractors’ hinge significantly on their selected subcontractors’ capabilities and experience (Muhamad & Zaini, 2022). When general contractors opt for subcontractors primarily based on the lowest bid, they risk engaging with parties that may lack the requisite skills or financial stability, leading to project inefficiencies and failures (Polat, 2015).

The second critical challenge, "Insufficient skills and qualifications of workers," is directly related to institutional and operational weaknesses in the construction sector. These weaknesses are critical factors that negatively impact stakeholder management. This situation is directly related to organizational structural problems, deficiencies in management processes, and low productivity levels (Winch, 2010). Insufficient institutional capacity leads to misalignments among stakeholders, causing disruptions in project processes (Kale & Arditi, 2001). Institutional and operational weaknesses in developing countries complicate stakeholder coordination, putting project success at risk (Toor & Ogunlana, 2010). Strengthening institutional structures, improving management processes, and establishing a more effective organizational framework that supports stakeholder management are essential to preventing such weaknesses.

The third most significant challenge, "The lack of experience and competence between contractors and subcontractors," is linked to deficiencies in planning, coordination, and implementation within the construction process. Poor project management and implementation

flaws can lead to a loss of trust and conflicts among stakeholders (Love et al., 2002). When stakeholder roles are not clearly defined, and coordination processes are inadequate, the risk of project failure increases (Oppong et al., 2017). The lack of coordination leads to both loss of time and budget, leading to increased design errors and the necessity of reworking during the implementation phase (Love et al., 2000). Therefore, the practical realization of project planning and strengthening coordination is considered a critical factor in increasing the success of stakeholder management. Modern management approaches, such as integrated project delivery (IPD), may reduce coordination problems, especially in large-scale projects (El Asmar et al., 2013).

The critical challenges hindering stakeholder management in the Turkish construction industry—including inappropriate selection of contractors and subcontractors, insufficient skills and qualifications of workers, and lack of experience and competence among contractors and subcontractors—carry significant practical and conceptual implications for the effective execution of construction projects. Addressing these issues requires practical implications including strategic initiatives to enhance project effectiveness, stakeholder communication, and overall operational capacity.

1. **Inappropriate Selection of Contractors and Subcontractors:** The selection process for contractors and subcontractors heavily influences project outcomes. Inappropriate selection can lead to subpar performance, increased conflicts, and delays, significantly undermining stakeholder trust. To mitigate these risks, stakeholders should implement rigorous assessment criteria that include evaluations of past performance, financial stability, and technical capacity. Establishing standardized selection processes can enhance alignment with project objectives and stakeholder expectations, fostering a more collaborative environment.

2. **Insufficient Skills and Qualifications of Workers:** A workforce lacking sufficient skills and qualifications directly impacts productivity, safety, and the quality of work on construction sites. There is a reported shortage of skilled labor in the construction industry, particularly in Turkey, where this gap is further exacerbated by an aging workforce and insufficient vocational training programs. It is imperative for stakeholders to invest in training programs focusing on vocational skills and certifications. Collaborative efforts between

industry leaders and educational institutions can bridge this skill gap, ultimately cultivating a more competent workforce capable of meeting modern construction demands. This action can lead to better project performance and satisfaction among stakeholders.

3. **Lack of Experience and Competence Between Contractors and Subcontractors:** The absence of experience and competency among contractors and subcontractors can lead to inefficient project management and misaligned expectations among stakeholders. This challenge highlights the importance of mentorship and capacity-building initiatives within the industry. Establishing formal partnerships that encourage experienced contractors to mentor less experienced subcontractors can enhance competencies, fostering improved communication and collaboration among all parties involved. Additionally, promoting knowledge sharing through workshops and industry forums can enhance collective expertise.

The critical challenges hindering stakeholder management in the Turkish construction industry—specifically, the inappropriate selection of contractors and subcontractors, insufficient skills and qualifications of workers, and a lack of experience and competence among contractors and subcontractors—bear significant conceptual implications. These challenges not only affect project outcomes but also illuminate the broader systems within which the construction sector operates. Addressing these issues requires conceptual implications are mentioned below:

1. **Inappropriate Selection of Contractors and Subcontractors:** The selection process emerges as a foundational aspect of stakeholder management. When contractors and subcontractors are inadequately chosen, it raises questions about the robustness of procurement frameworks and project management strategies employed in the Turkish construction context. Research indicates that appropriate contractor selection is crucial for building effective partnerships, thereby influencing project success and satisfaction among stakeholders. Moreover, frameworks such as Total Quality Management (TQM) could be considered to integrate quality selection practices systematically.

2. **Insufficient Skills and Qualifications of Workers:** The gap in workforce skills represents a significant barrier to effective stakeholder management. This challenge

necessitates a re-evaluation of education and training systems within the construction industry. Improving worker qualifications is not only an operational necessity but also a strategic imperative for enhancing stakeholder trust and maintaining quality standards within projects. Additionally, this condition requires the establishment of industry-wide training programs that align with technological advancements and project complexities. Ongoing professional development initiatives are essential to address skills shortages and ensure that all contributors meet requisite competencies in their roles.

3. **Lack of Experience and Competence Between Contractors and Subcontractors:** This challenge points toward a broader systemic issue rooted in the organizational culture of the construction sector. The relationship dynamics between contractors and subcontractors need to be conceptually reimagined to foster collaborative practices and enhance experience sharing. Establishing clear channels for mentorship and knowledge transfer can cultivate a learning-oriented environment where competencies are developed organically within existing teams. These initiatives can minimize project risks stemming from inexperience and lead to more coherent stakeholder management practices, promoting a culture of continuous improvement and mutual trust among the parties involved.

Despite the efforts made in this study that significantly contribute to the critical challenges hindering the stakeholder management, it has some limitations, which will be addressed in future research. First, it exclusively analyzed peer-reviewed articles. Future studies may consider other academic publishing formats, such as book chapters. Second, using data from the WoS database could have constraints. Thus, researchers should explore additional databases like Science Direct or Scopus. Third limitation of the current study is the sample group. In this study, sample group is comprised of architects, civil engineers, contractors and material suppliers. Future research may enlarge the variety of the sample for example other engineering group may incorporate to sample group. Despite these limitations, this study has the potential to inspire researchers and practitioners further to advance both research and practice in stakeholder management in construction industry.

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