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Unveiling the Claims' Trigger in Public Construction Projects: An In-depth Analysis

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ABSTRACT

Claims in the construction industry are a crucial element of project management and contract administration, with the potential to significantly impact project timelines, costs, and stakeholder relationships. Understanding the nature and causes of construction claims is vital for mitigating disputes and ensuring successful project delivery. This study delves into and assesses the causes of construction claims in the public construction industry in Palestine and identifies the parties responsible for these claims. A mixed-method approach was used, combining qualitative interviews and quantitative questionnaires. Thirty-five causes of claims were identified through literature review and expert interviews. Descriptive statistics were employed to analyze the data, ranking the causes by significance index and assigning responsibility. The results showed that contractors are responsible for approximately 50% of the identified causes of claims, followed by owners at 28%, and designers at 22%. Furthermore, the results revealed that the three most significant causes of claims are: poor management processes by contractors, work suspension due to the owner's non-compliance with contract requirements, and attempts by contractors to increase the quantities of certain work items. The findings provide valuable insights for all key players in public construction projects, serving as guidelines to minimize disruptions and enhance project outcomes.

Keywords: Public construction, Construction claims, Contract parties.

INTRODUCTION

The construction industry is characterized by its complexity, inherent risks, and uncertainties. It involves extended project durations, the participation of multiple stakeholders, and the collaboration of various disciplines, including architectural, structural, and electro-mechanical disciplines. This complexity makes effective project management and contract administration essential for successful project delivery.

In Palestine, the construction sector plays a vital role in national economic growth, but is also characterized by a high frequency of claims (Enshassi et al.,2006; 2009b). Claims are not merely administrative procedures; they often lead to significant cost and time overruns, sometimes delaying projects by several months or even years and increasing total costs by 10%-30% beyond initial budgets (Plebankiewicz & Wieczorek, 2020; Melaku et al., 2021; Morad, 2023). Furthermore, claims can damage stakeholder relationships, creating adversarial environments that escalate into disputes requiring arbitration or litigation

(Elghandour, 2006; Assaf et al., 2019; Ansari et al., 2022).

It is important to distinguish between claims and disputes. A claim is defined as a formal request submitted by a stakeholder seeking additional compensation, a time extension, or other contractual remedies due to events impacting project performance (Enshassi et al., 2009a, b; Shah et al., 2014; Mishmish & El-Sayegh, 2016; Zaneldin, 2020). A dispute arises when a claim is contested or remains unresolved, potentially escalating to arbitration, litigation, or alternative dispute resolution. Effective claim management strategies, including clear documentation and early resolution, are therefore crucial to prevent disputes and promote collaboration (Abougamil, 2023).

Despite the extensive exploration of the sources and impacts of construction claims in previous studies, there remains a significant gap in the attribution of specific responsibilities to the key stakeholders (owners, designers, and contractors) in the context of public construction projects, particularly in Palestine. Existing research does not provide a comprehensive analysis that systematically identifies the causes of claims and clearly assigns responsibility for each cause to the relevant party. This study aims to fill this gap by offering a detailed investigation into the causation of claims and the corresponding responsibility allocation within governmental construction projects.

LITERATURE REVIEW

Construction claims are a persistent challenge in the construction industry, particularly in public-sector projects and developing economies, where limited experience with international contract standards, bureaucratic constraints, and resource limitations exacerbate risks (Sibanyama et al., 2012; Al-Mohsin, 2012; Farooqui et al., 2014; Mehanny & Grigg, 2015; Assaf et al., 2019; Kikwasi, 2021; Cakmak & Cakmak, 2013; Ansari et al., 2022; Bakhary et al., 2015). While previous studies have extensively examined the causes and impacts of claims across various regions including the UAE (Zaneldin, 2005, 2020; Mishmish & El-Sayegh, 2018), Malaysia (Yoke-Lian et al., 2012), Oman (Al-Mohsin, 2012), Pakistan (Khahro & Ali, 2014; Mohamed et al., 2014; Okereke et al., 2023), Libya (Abdulnabi & Agarwal, 2016), Nigeria (Ujene & Edike, 2016), Saudi Arabia (Alshammari et al., 2017), Spain (Ballesteros-Pérez et al., 2017), Iraq (Shadhar, 2017), India (Moza & Paul, 2018), and Iran (Jalal et al., 2019), most of them focus on general claim impacts rather than on responsibility allocation among stakeholders, particularly in public-sector contexts.

In Palestine, claims often arise due to ambiguities in project documents, design changes, and misinterpretations of contract conditions (Elghandour, 2006; Shweiki, 2013; Hardjomuljadi, 2011, 2016), yet systematic identification of which party (owner, designer, or contractor) is responsible for each cause remains limited. This gap is critical, because understanding stakeholder responsibility is essential for mitigating claims and improving contract management.

This study advances prior research by systematically linking each identified cause of claims to the party most responsible, moving beyond the largely qualitative descriptions found in earlier models. To address the lack of explicit responsibility mapping, we employ a transparent quantitative method: each cause is assigned to one of three principal parties (owner, designer, or contractor), with shared responsibilities allocated proportionally. A clear threshold-based rule is applied; if a single party is assigned responsibility in ≥50% of cases, that party is deemed fully responsible; otherwise, responsibility is shared. By integrating causation analysis with this mechanism, our framework produces structured, evidence-based responsibility profiles and a stakeholder-specific model of claim dynamics. This approach offers actionable insights, enabling policymakers, project managers, and contractors to focus preventive measures on the parties most frequently responsible, thereby reducing future claims in public construction projects.

RESEARCH METHODOLOGY

This research employed a mixed-method approach, integrating qualitative and quantitative techniques to thoroughly analyze causes of construction claims and assign stakeholder responsibility, as shown in Figure 1. The qualitative phase, through expert interviews, offered in-depth insights into the complexities of claims, helping identify gaps in existing literature and refine identified causes. The quantitative phase used structured questionnaires to collect measurable data from a broader audience, systematically ranking the significance of each cause and providing statistical evidence of impact.

It also clarified responsibility, linking each cause to specific parties (owner, designer, or contractor) for clearer accountability.

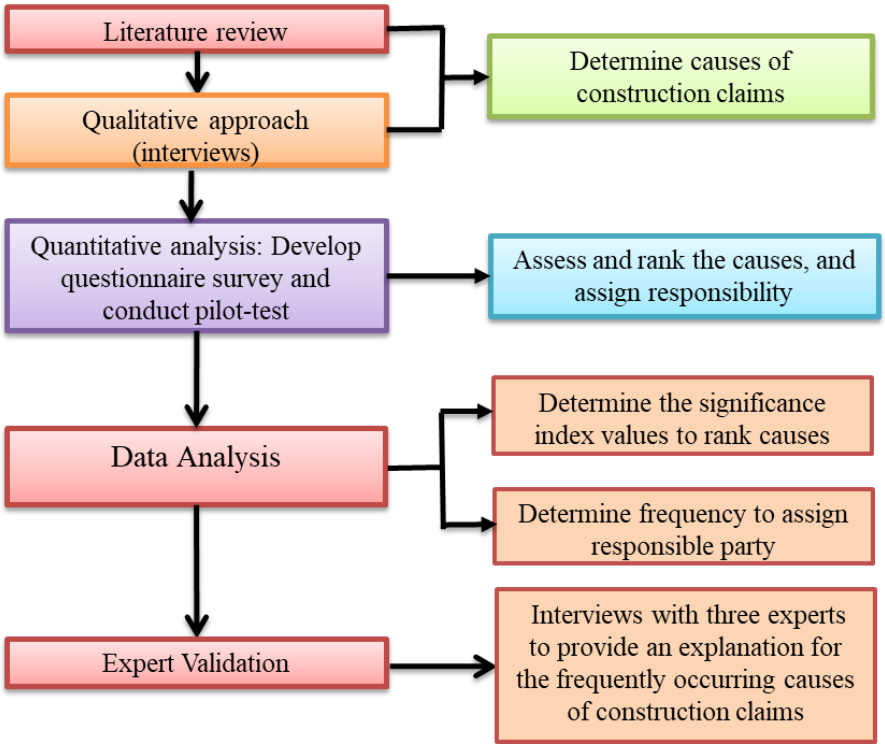

Figure 1. Research methodology

Qualitative Phase – Expert Interviews

Semi-structured interviews were conducted with subject-matter experts in FIDIC contracts and construction arbitration. This phase aimed to assess the comprehensiveness and clarity of claim causes identified from the literature and refine the questionnaire for the quantitative survey. It is assumed that these experts' insights are representative of broader industry understanding; however, a limitation of this approach is that the findings rely on the subjective judgments of a limited number of participants, which may not capture all perspectives in the sector.

Quantitative Phase – Questionnaire Survey

A structured questionnaire was developed based on the literature review and expert interviews, targeting thirty-five identified causes of construction claims. The questionnaire was then distributed to a targeted group of 50 professional experts, comprising 20 contractors, 15 designers and consultants, and 15 owners. Given the unknown population size, a non-probability sampling method was employed to select these experts, ensuring a diverse and representative sample of the industry.

Respondents rated the significance of each cause using a five-point Likert scale and assigned responsibility to one of three parties (owner, designer, or contractor). A party was deemed fully responsible if ≥50% of respondents selected it; otherwise, responsibility was shared proportionally. It is assumed that respondents possess sufficient knowledge and experience to provide reliable ratings and that the 50% threshold is an appropriate criterion for assigning primary responsibility.

Data Analysis

The collected survey data was analyzed using Microsoft Excel. The degree of significance for each identified cause was determined using the Significance Index (SI) formula, as presented in Equation (1):

$$\text{Significance Index (SI)} = \frac{1*X_1+2*X_2+3*X_3+4*X_4+5X_5}{5*N} * 100\% \quad (1)$$

where:

- ✓ X_1: No. of respondents for "not significant"
- ✓ X_2: No. of respondents for "somewhat significant"
- ✓ X_3: No. of respondents for "significant"
- ✓ X_4: No. of respondents for "very significant"
- ✓ X_5: No. of respondents for "extremely significant"
- ✓ N: Total No. of respondents.

This formula was used to rank the causes according to their significance.

Expert Validation

Follow-up interviews with three professionals were conducted to discuss frequently occurring causes and ensure the robustness and practical relevance of the findings. These interviews help mitigate potential biases and enhance the credibility of the data.

RESULTS AND DISCUSSION

The following sub-sections present a comprehensive analysis of the data obtained from the questionnaire survey. This analysis aims to provide an in-depth understanding of the collected responses and to extract meaningful insights pertinent to our research objectives. By employing robust statistical techniques and rigorous data interpretation methods, this section ensures a thorough and systematic examination of the survey results.

Respondent Analysis

The response rate to the questionnaire survey was approximately 66%, with 33 out of 50 targeted professional experts participating. The distribution of responses included thirteen contractors, eleven designers/consultants, and nine owners, ensuring balanced representation across key stakeholder groups. Although the overall population size of construction professionals in Palestine is not formally documented, the sector is relatively small and concentrated compared to larger, more established markets. Within this context, engaging 33 senior professionals with direct experience in public projects provides meaningful insights into prevailing claim dynamics. Nevertheless, we acknowledge that the modest sample size constitutes a limitation, as it may not fully capture the diversity of perspectives across the broader industry.

Furthermore, the data indicates that approximately 85% of the participants (28 out of 33) have over ten years of experience in their respective fields within construction projects. This high level of expertise among respondents enhances the reliability and credibility of the collected data and subsequent results, ensuring that the insights drawn from this survey are well-informed and reflective of experienced professional perspectives.

Effect of Claims on Construction Projects

Respondents were asked to identify the effects of claims on construction projects by selecting all applicable impacts. As depicted in Figure 2, all respondents unanimously confirmed that claims obstruct the achievement of project goals. The data indicates the following descending order of impacts: project time overruns (69.7%), cost overruns (54.5%), poor project performance (42.4%), and reduced labor productivity (24.2%). This comprehensive assessment underscores the multi-faceted and significant negative consequences of claims on the overall success of construction projects.

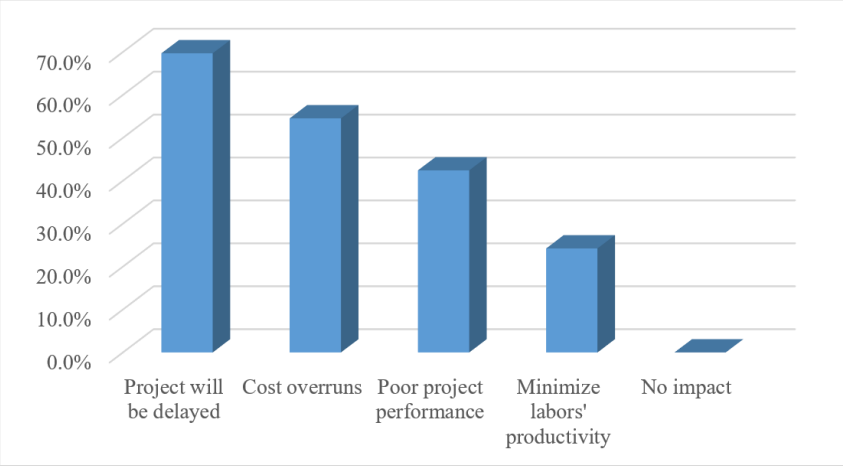

Figure 2. Impact of claims on construction project outcomes

The Evaluation and Ranking of Construction Claims' Causes

This study identified thirty-five distinct causes of construction claims, which were evaluated by respondents using a five-point Likert scale to capture the perceived significance of each factor. The causes were then ranked based on their significance index, allowing comparison of their relative impact on construction projects. For clarity, a summary table (Appendix 1) presents all 35 causes together with their mean scores and significance indices. While this comprehensive list offers a broad overview of claim drivers in public construction projects, detailed analysis is limited to the ten most frequently occurring causes (Table 1), which represent the most critical factors shaping claim occurrence. This structured assessment provides industry professionals with both a holistic view of potential claim sources and targeted insights for mitigating the most influential causes in future projects.

Table 1. Mean scores, significance indices, and responsible parties for the top ten causes of construction claims

Causes of Public Construction Claims	Mean	Significance index	The number of respondents who assign the owner	Frequency (%)	Number of respondents who assign a contractor	Frequency (%)	Number of respondents who assign a designer	Frequency (%)	The Identified Responsible Party
Poor management process of construction activities	4.27	85.5	3	9.1	24	72.7	6	18.2	Contractor
Suspension of work due to not commitment of the owner towards the contractor as specified in the contract	4.12	82.4	22	66.7	9	27.3	2	6.0	Owner
Contractor's manipulation of work quantities.	4.09	81.82	0	0.0	28	84.8	5	15.2	Contractor
Misunderstanding the FIDIC general conditions by contractors	4.09	81.82	1	3.0	28	84.8	4	12.2	Contractor
Poor selection of the construction method for some project items	4.03	80.61	0	0.0	27	81.8	6	18.2	Contractor
Suspension of work due to the non-commitment of contractors to the owner's instructions related to safety rules	3.97	79.39	6	18.2	25	75.8	2	6.0	Contractor
Lack of coordination and integration among design teams leads to the development of inconsistent drawings	3.94	78.79	2	6.0	4	12.2	27	81.8	Designer
The discrepancy between actual and estimated quantities	3.88	77.58	6	18.2	5	15.2	22	66.6	Designer
Delay in progress payments as specified in the contract	3.85	76.97	27	81.8	5	15.2	1	3.0	Owner
Changes in the design after bid award based on the owner's request	3.85	76.97	21	63.6	0	0.0	12	36.4	Owner

Table 1. Distribution of responsibility among parties for construction claim causes

Responsible Party	No. of Causes- Full responsibility	No. of Causes- partially shared with one party	No. of Causes- partially shared with the other two parties	Responsibility (%)
Owner	8	2	2	27.6
Designer	7	1	2	23.3
Contractor	16	1	2	49.1

To elucidate the frequent occurrence of the causes listed in Table 1, we conducted interviews with three professional experts in construction projects, forming the basis for our interpretation of the results.

Poor Management Process

The analysis revealed that poor management processes are the most significant cause of construction claims in Palestine, a finding consistent with global trends. Ansari et al. (2022) demonstrated that weak management practices consistently undermine project performance, leading to cost overruns and delays. Similarly, Tien et al. (2022) found that inadequate management in complex projects increases claim frequency and disrupts collaboration, while Bakhary et al. (2017) argued that even when contract terms are well understood, poor management can lead to unresolved claims, underlining the importance of effective management strategies. Locally, Dmaidi et al. (2016) emphasized that project success in Palestine depends heavily on effective management practices, further confirming the relevance of our findings.

In Palestine, expert interviews confirmed that many construction companies assign unqualified or inexperienced engineers to critical tasks, such as planning, organizing, and controlling construction activities. This practice undermines project timelines, increases costs, and reduces quality, leading to higher rates of construction claims.

Work Suspension Due to the Owner's Non-compliance with Contract Requirements

Work suspensions arising from the owner's failure to fulfill contractual obligations emerged as the second most frequent cause of construction claims in Palestine. These incidents are prevalent in many projects across the region, largely due to its unique socio-economic, political, and geographical challenges (Mahamid, 2017).

In Palestine, professional experts confirmed that when owners fail to meet their contractual obligations, this significantly hinders the contractor's ability to perform work efficiently and effectively. For instance, delays in financial payments or the provision of essential materials and equipment by the owner can create serious financial and logistical challenges for the contractor, directly impacting the project's timeline and quality. Such suspensions of work can result in considerable negative consequences, including increased costs and deviations from the scheduled completion date. In these situations, contractors are entitled to file claims for compensation to recover the additional financial losses and expenses incurred due to the owner's non-compliance with contractual terms. These claims serve to protect the contractor from bearing the financial burden caused by the owner's deficiencies. This finding aligns with Mahamid (2017), who identified the owner's failure to meet contractual requirements as a major contributor to time overruns in road construction projects in Palestine, which leads to significant disruptions and subsequent claims from contractors.

Contractor's Manipulation of Work Quantities

The practice of contractors inflating quantities of work items to increase profits, maximize progress payments, and mitigate perceived risks is identified as the third most common cause of construction claims. In Palestine, experts attribute this issue to the frequent use of unit price contracts, often stemming from incomplete or unclear drawings and specifications. As a result, contractors may deliberately overestimate quantities or identify unreported quantities in project documentation and invoices, claiming that they reflect actual work completed. This tactic frequently leads to financial claims for compensation related to alleged additional work, sparking disputes between contractors and owners regarding the accuracy of the reported quantities and invoices. Such disputes complicate the financial settlement process as contractors seek compensation for

quantities that they consider additional or originally undocumented.

This finding aligns with previous research by Shen et al. (2017), which highlighted that those discrepancies between actual work and reported quantities are a common source of claims, particularly in projects with inadequate oversight. Contractors facing financial pressures often resort to inflating quantities to meet their financial obligations. Similarly, Mahamid (2012) emphasized that the volatile economic conditions in Palestine often drive contractors to adopt such strategies that may include inflating quantities to mitigate financial risks.

Misunderstanding of FIDIC General Conditions

The fourth leading cause of construction claims in Palestine stems from contractors' misunderstandings of the FIDIC (Fédération Internationale des Ingénieurs-Conseils) general conditions. A common issue is that parties, particularly contractors, may not fully understand their contractual obligations, leading to unintended breaches.

The FIDIC Conditions of Contract, widely used in international construction projects, establish clear procedures for outlining the rights and responsibilities of each party involved in a construction project. Several clauses are particularly relevant to the Palestinian context, where limited exposure to such international standards can lead to procedural oversights. For example, **Clause 20.1** (Contractor's Claims) requires contractors to give written notice of a claim within 28 days of becoming aware of an event, followed by detailed substantiation. Non-compliance can result in loss of entitlement. **Clause 13** (Variations and Adjustments) stipulates that any changes to the scope of work must be formally instructed or approved by the Engineer before execution, while **Clause 8.4** (Extension of Time) governs entitlement to schedule adjustments. In Palestine, unfamiliarity with these provisions can lead contractors to undertake additional work without prior approval or to miss the required notice periods, prompting owners to withhold payment, deny extra compensation, or refuse time extensions. These issues are compounded by the industry's growth-stage status, political instability, and limited institutional resources, which hinder the consistent application of FIDIC conditions and the preparation of adequate supporting documentation. Addressing these gaps through targeted training and localized guidance could significantly improve contractual compliance and reduce claim-related disputes.

This finding is consistent with the observations of Hardjomuljadi (2011), Kim et al. (2022), Kalogeraki (2024), and Abdelalim (2024), who all noted that many claims could be prevented through a more comprehensive understanding and knowledge of FIDIC general conditions.

Poor Selection of a Construction Method

The results indicate that poor selection of construction methods for specific work items ranks among the primary causes of construction claims. An important consequence of inadequate method selection is its adverse effect on project performance indicators, such as cost, schedule, and quality.

In Palestine, the absence of clear or complete design documentation often presents contractors with significant challenges in choosing suitable construction methods. For instance, when designs lack specific details; such as material types or construction technique; contractors may resort to less appropriate methods of execution. These methods may require specialized skills or equipment that are not readily available locally, forcing contractors to procure additional resources or invest in workforce training. Such measures can compromise work quality, cause project delays, and incur additional costs, including delay penalties and increased labor expenses. These issues may also lead to disputes with the project owner regarding the responsibility for these unforeseen expenses, often prompting contractors to file claims to recover costs.

This finding aligns with the conclusions of Ozcan-Deniz & Zhu (2016) and Ansari et al. (2022), who noted that the selection of construction methods is critical for successful project execution and for mitigating claims related to perceived performance failures.

Non-compliance with Safety Regulations

The suspension of work due to a contractor's non-compliance with safety regulations is identified as the sixth most frequent cause of construction claims. Eyiah et al. (2019) highlighted that the construction industry is inherently high-risk, and failure to comply with health and safety regulations can lead to serious accidents, injuries, and even fatalities. Therefore, strict adherence to safety regulations outlined in contract documents is essential for both contractors and their workforce.

In Palestine, challenges such as a lack of comprehensive safety management systems, limited safety motivation among workers (often stemming from inadequate training and safety education), and ineffective leadership contribute to non-compliance with safety standards. These factors create an environment where safety protocols are sometimes overlooked, increasing the likelihood of incidents. When contractors fail to adhere to safety protocols, project owners may suspend work, leading to delays and significant financial losses for contractors, including additional labor costs and expenses for leased equipment. Contractors may then seek to attribute these delays to the owner, arguing that the suspension was beyond their control and directly led to the extra costs. As a result, contractors often file claims seeking compensation for the financial losses incurred due to the suspension, regardless of the initial cause.

This finding is consistent with the research of Nordlöf et al. (2015) and Eyiah et al. (2019), who emphasized that effective safety programs and compliance with occupational health and safety (OHS) regulations are essential for successful construction projects and can significantly reduce the likelihood of claims.

Lack of Coordination and Integration among Design Teams

The results indicate that a lack of coordination and integration among design teams, leading to the development of inconsistent drawings, is another significant cause of construction claims. This issue is particularly pronounced in projects involving multiple design disciplines, where the potential for miscommunication and design clashes increases. Inadequate coordination during the design phase frequently results in numerous modifications during construction, often prompting contractors to submit Requests for Information (RFIs) to clarify design ambiguities (Soh et al., 2020). These RFIs can lead to the issuance of change orders, requiring contractors to adjust their plans and allocate additional resources to accommodate the changes, thereby incurring higher costs and experiencing project delays. Consequently, contractors may file claims to seek compensation for the additional expenses and delays resulting from these inconsistencies.

In Palestine, where construction projects often face complex logistical and communication challenges, limited integration among design teams can exacerbate these issues. Contractors frequently encounter unforeseen costs and take on responsibilities that were not originally anticipated due to the lack of effective coordination among design teams. Such claims are common in the local context, as contractors bear additional financial and scheduling burdens stemming from design conflicts and inconsistencies.

This finding aligns with previous studies by Mousli and El-Sayegh (2016), Hassanain et al. (2018), and Osuizugbo et al. (2022), who emphasized that poor coordination can lead to design conflicts, negatively impact project outcomes, and increase the likelihood of claims.

Discrepancies between Actual and Estimated Quantities

Discrepancies between actual and estimated quantities are a significant cause of construction claims. In Palestinian construction projects, these discrepancies are often driven by incomplete project documentation, economic pressures, and the unique political context, all of which contribute to a high incidence of claims. Due to these factors, designers may face difficulties in preparing an accurate Bill of Quantities (B.O.Q.). As a result, the actual quantities required for the project may differ from initial estimates, leading to cost deviations that can severely impact project outcomes.

Discrepancies between estimated and actual quantities can have substantial financial and scheduling implications. For example, when actual quantities executed on-site exceed those outlined in the B.O.Q., contractors may encounter project delays and increased costs, as additional time and resources are required to complete the work. Conversely, if actual quantities fall short of estimates, contractors may struggle to achieve anticipated profits, as they may have already hired labor or rented equipment based on higher quantity estimates. This shortfall often leads contractors to submit claims seeking compensation for additional costs incurred due to these discrepancies.

This finding is consistent with the research of Mahamid and Bruland (2012) and Mahamid (2021), who highlighted that insufficient detail and accuracy during the design phase can result in B.O.Q. miscalculations, subsequently leading to disputes and claims during construction.

Delayed Progress Payments

Financial difficulties and insufficient funds may lead project owners to delay progress payments to contractors beyond the dates stipulated in the contract, creating liquidity crises for contractors. This situation is especially prevalent in Palestine, where economic instability, restricted access to financial markets, and bureaucratic inefficiencies are common (Chadee et al., 2023; Hamad, 2023). The broader political context, including movement restrictions and donor-dependent financing, often exacerbates these problems by disrupting project cash flows and delaying fund disbursements. When contractors face challenges in covering ongoing expenses, such as labor wages, material purchases, and equipment rentals, delayed payments further intensify financial pressures. Contractors may be forced to secure alternative financing, such as loans, which increases project costs through added interest and charges. Disrupted cash flow can also result in temporary suspension of activities, schedule delays, and exposure to liquidated damages for late completion (Chadee et al., 2023; Eastman, 2022; Hamad, 2023; Okereke et al., 2023).

These challenges are not unique to Palestine. Studies in other conflict-affected regions, such as Iraq, Afghanistan, and parts of Sub-Saharan Africa (Bray, 2005; Mahmud et al., 2021; Karimi & Piroozfar, 2022; Umuhoza et al., 2023, Sharifzada & Deming, 2024) have similarly documented how political and economic instability amplifies claim-related issues, particularly payment delays and cost escalations. In such environments, contractors often identify delayed or irregular payments as a leading cause of claims, reflecting systemic financial uncertainty and fragile institutional capacity.

Changes in Design after Bid Award

Design changes requested by the owner after the bid award rank among the most common causes of construction claims in Palestine. When design modifications are introduced post-award, contractors face significant challenges that directly impact both project costs and timelines, as they may need to revise plans, procure additional materials, or adjust labor schedules (Aslam et al., 2019). These changes compel contractors to revise operational and financial strategies, and may even require hiring sub-contractors to implement the modifications. Such adjustments result in unforeseen additional costs that were not accounted for in the original project bid. Consequently, contractors often file claims against the owner to seek compensation for the extra expenses and financial losses incurred due to these post-award design changes.

The Palestinian construction sector is particularly susceptible to the negative impacts of such design changes. Political and economic conditions often lead to financial constraints that limit contractors' capacity to absorb unexpected costs associated with design modifications. As noted by Aslam et al. (2019), the financial impact of design changes can result in cost overruns of 5% to 40% of the total project cost. This issue is further exacerbated by the fact that many construction projects in Palestine rely on funding from international aid or government budgets, which are often unpredictable and subject to delays.

Allocation of Responsibility for Construction Claims

A significant limitation in previous research has been the lack of explicit identification of the responsible party for each cause of construction claims. To address this issue, the present study requires respondents to allocate responsibility to one of three key parties: the owner, designer, or contractor, for each identified cause. Subsequently, the data is analyzed by calculating the frequency of each party being selected as responsible. If a single party is assigned responsibility in 50% or more of the cases, that party is deemed fully responsible for the corresponding cause. Where no party meets this criterion, responsibility is considered shared among one or more parties. Table 2 illustrates the distribution of construction claim causes among the responsible parties, categorizing them by full or partial responsibility. It also provides the percentage of responsibility attributed to each party relative to the total number of identified causes in the study. To derive the distribution of responsibility among contractors, owners, and designers, each of the thirty-five identified claim causes was systematically assigned to the party (or parties) deemed primarily responsible. In cases of shared responsibility, proportional weights were applied: 50% for each party when two were involved, and one-third each when all three parties shared responsibility. The aggregated responsibility scores for each party were then summed and normalized by dividing them by the total number of identified causes. This procedure ensured that the distribution reflected both exclusive and

shared responsibilities across all causes. Based on this method, contractors were found to be responsible for approximately 50% of the causes, followed by owners at 28% and designers at 22%. Thus, the independent variable underlying this distribution is the assigned responsibility for each claim cause, derived directly from expert responses.

Table 1 identifies the responsible parties for the top ten causes of construction claims, while Appendix 1 provides a comprehensive analysis of the thirty-five identified causes. The findings reveal that the contractor is responsible for five of the top ten causes, including poor management of construction activities, attempts to inflate quantities of work items to boost profits and progress payments, misinterpretation of FIDIC general conditions, poor selection of construction methods for certain project items, and work suspension due to the contractor's non-compliance with the owner's safety instructions.

Conversely, the owner is held accountable for three causes: work suspension due to the owner's failure to fulfill contractual obligations towards the contractor, delays in progress payments as specified in the contract, and post-bid design changes requested by the owner.

Finally, the designer is responsible for the remaining two causes, which include a lack of coordination and integration among design teams, resulting in inconsistent drawings and discrepancies between actual and estimated quantities.

CONCLUSION

This study identified and evaluated 35 causes of construction claims in Palestinian projects and attributed responsibility for these causes among owners, contractors, and designers. The findings clearly show that construction claims significantly affect project performance, with schedule delays emerging as the most critical impact, followed by cost overruns and reduced quality. Among the top ten identified causes, contractors were responsible for five, owners for three, and designers for two. Specifically, the results highlight that poor management of construction activities, owner-related work suspensions, contractors' attempts to increase work quantities, misunderstandings of FIDIC conditions, and inadequate selection of construction methods are the leading contributors to claims. Overall, the study emphasizes that contractors account for a half of the total claim causes, while owners and designers contribute 28% and 22%, respectively. These findings underline the importance of proactive claim prevention measures across all project stakeholders. By understanding the distribution of responsibility and the most frequent causes, decision-makers can prioritize efforts to reduce claims, improve collaboration, and enhance the efficiency of construction projects in Palestine.

Recommendation

To minimize claims in public construction projects, this study strongly recommends the introduction of mandatory pre-bid workshops on critical FIDIC clauses (e.g. Clause 20.1 on Contractor's Claims and Clause 13 on Variations). Such workshops would ensure that contractors, owners, and designers have a clear and consistent understanding of notice requirements, entitlement procedures, and contract management practices.

Limitations and Future Research

However, the study's focus on Palestinian projects may limit the generalizability of its findings to regions with different industry practices or regulations. Additionally, a small sample size, despite including experienced professionals, may restrict the comprehensiveness of the findings.

Future research could address these limitations by conducting comparative analyses between different construction sectors (e.g. building *versus* highway) and exploring claim dynamics in public *versus* private projects. Developing a framework to enhance contractual practices in Palestine could further help in reducing claims and improving project outcomes across sectors.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

While preparing this work, the authors used ChatGPT and Grammarly to proofread and enhance the language of the article. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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APPENDIX 1. Rank, significance index, and responsible party for the identified causes of claims

No.	Causes of construction claims	Significance Index	Rank	The number of respondents who assign the owner	Frequency (%)	Number of respondents who assign a contractor	Frequency (%)	Number of respondents who assign a designer	Frequency (%)	The Identified Responsible Party
1	Delay in progress payments as specified in the contract	76.97	9	27	81.82	5	15.15	1	3.03	Owner
2	Delay in getting approval on shop drawings and samples from the site engineer	75.76	11	4	12.12	8	24.24	21	63.64	Designer
3	Performing several tasks at the same time and in the same location by different contractors who have contracts with the owner	73.33	19	12	36.36	17	51.52	4	12.12	Contractor
4	Delay in site handover from the owner to the awarded contractor	75.15	14	6	18.18	24	72.73	3	9.09	Contractor
5	Delay in issuing the Notice to Proceed letter	70.30	26	22	66.67	3	9.09	8	24.24	Owner
6	Interference of the owner in the selection of construction methods for different activities	72.12	22	13	39.39	4	12.12	16	48.48	Designer, Owner
7	Procrastination of the site engineer in responding to contractor inquiries during the construction phase	69.09	30	4	12.12	5	15.15	24	72.73	Designer
8	Poor site layout planning that prepared by the designer	71.52	24	2	6.06	24	72.73	7	21.21	Contractor
9	Unavailability of qualified technical staff assigned by the owner	74.55	18	1	3.03	22	66.67	10	30.30	Contractor
10	Delay in the commencement of construction due to the late in obtaining the license	70.91	25	1	3.03	25	75.76	7	21.21	Contractor
11	Delay in the delivery of construction materials from suppliers	75.76	12	4	12.12	27	81.82	2	6.06	Contractor
12	Misunderstanding the FIDIC general conditions by contractors	81.82	4	1	3.03	28	84.85	4	12.12	Contractor

No.	Causes of construction claims	Significance Index	Rank	The number of respondents who assign the owner	Frequency (%)	Number of respondents who assign a contractor	Frequency (%)	Number of respondents who assign a designer	Frequency (%)	The Identified Responsible Party
13	Unexpected site conditions	66.06	32	13	39.39	10	30.30	10	30.30	Owner, Designer, Contractor
14	Delay in project completion as specified in the contract due to bad weather conditions	63.03	33	6	18.18	26	78.79	1	3.03	Contractor
15	Poor management process of construction activities	85.45	1	3	9.09	24	72.73	6	18.18	Contractor
16	Lack of coordination and integration among design teams leads to the development of inconsistent drawings	78.79	7	2	6.06	4	12.12	27	81.82	Designer
17	Changes in the design after bid award based on the owner's request	76.97	10	21	63.64	0	0.00	12	36.36	Owner
18	Changes in specifications of some items after bid award, based on the owner's request	75.15	15	24	72.73	2	6.06	7	21.21	Owner
19	Unsteady political conditions in the country	75.15	16	27	81.82	3	9.09	3	9.09	Owner
20	Poorly estimating the cost of the project	75.15	17	6	18.18	8	24.24	19	57.58	Designer
21	Poorly estimating the completion time of the project	72.73	21	2	6.06	9	27.27	22	66.67	Designer
22	The discrepancy between actual and estimated quantities	77.58	8	6	18.18	5	15.15	22	66.67	Designer
23	Unavailability of some specified construction materials in the local market	73.33	20	9	27.27	9	27.27	15	45.45	Designer, Owner, Contractor
24	The existence of several brands for the same product, with variation in the price and quality	69.70	29	4	12.12	18	54.55	11	33.33	Contractor
25	Poor preparation of some drawings and inconsistent with the real conditions	75.76	13	1	3.03	4	12.12	28	84.85	Designer
26	An unsuitable schedule prepared by the contractor	68.48	31	2	6.06	26	78.79	5	15.15	Contractor
27	Suspension of work due to force majeure	72.12	23	20	60.61	12	36.36	1	3.03	Owner

No.	Causes of construction claims	Significance Index	Rank	The number of respondents who assign the owner	Frequency (%)	Number of respondents who assign a contractor	Frequency (%)	Number of respondents who assign a designer	Frequency (%)	The Identified Responsible Party
28	Suspension of work due to not commitment of contractor's with the owner's instructions related to safety rules	79.39	6	6	18.18	25	75.76	2	6.06	Contractor
29	Suspension of work due to not commitment of the owner towards the contractor as specified in the contract	82.42	2	22	66.67	9	27.27	2	6.06	Owner
30	Lack of contractor experience in implementing uncommon (new type) projects	70.30	27	6	18.18	24	72.73	3	9.09	Contractor
31	Poor selection of the construction method for some project items	80.61	5	0	0.00	27	81.82	6	18.18	Contractor
32	Extension in the size and quantities of the work compared with specified in the bid documents	60.61	35	7	21.21	23	69.70	3	9.09	Contractor
33	Contractor's manipulation of work quantities	81.82	3	0	0.00	28	84.85	5	15.15	Contractor
34	Sudden changes in municipal regulations regarding traffic system management in some areas	61.21	34	17	51.52	15	45.45	1	3.03	Owner, Contractor
35	Currency exchange during the construction phase of the project	70.30	28	22	66.67	7	21.21	4	12.12	Owner