

An analysis of the impacts of pre-contract and contract escalation for project success in Short Form Contracts

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Abstract

This study examines the effects of pre-contract and contract-stage escalation on project success in Short Form Contracts, as escalation is usually not incorporated leading to several project delivery challenges. It also identifies key drivers of escalation and proposes strategies to mitigate associated risks in construction project delivery. A mixed-methods design was adopted, combining 22 structured questionnaires analysed using descriptive statistics with 15 semi-structured interviews analysed through thematic analysis to provide deeper insight into industry practices and challenges. Findings indicate that escalation significantly affects project performance, leading to cost overruns, schedule delays, and reduced quality outcomes. Poor consideration of escalation during the pre-contract stage results in financial inefficiencies, strained client–contractor relationships, disputes over variations, reduced profitability, and cash flow challenges. Key drivers include inflation, market volatility, and delays in applying escalation adjustments. The study highlights the importance of proactive cost management strategies such as comprehensive cost planning, life cycle costing, realistic budgeting, and strategic investment planning. It further emphasises the need for digital technology adoption, competent contractor engagement, and improved project delivery methods, alongside strengthened regulation, financial literacy, and capacity development. Overall, this research contributes to knowledge by offering an integrated framework for managing escalation across both project stages in Short Form Contracts, improving understanding of cost control, risk management, and project performance outcomes.

Keywords: Pre-Contract and Contract Escalation, Short Form Contracts, Cost Estimation, South Africa

1. Introduction

The construction industry operates in a highly uncertain environment where fluctuations in material prices, labor costs, and macroeconomic conditions consistently drive project cost escalation (Castelblanco et al. 2025; Anireddy 2024; Krupnik and Stryjewski 2023). These challenges are particularly severe in South Africa and other developing economies due to inflation, supply chain instability, and regulatory pressures (Castelblanco et al. 2025). As a result, escalation during both pre-contract and contract stages has become a key determinant of project success, particularly in Short Form Contracts (SFCs), which offer limited flexibility for accommodating price adjustments and therefore compromise cost certainty.

SFCs are simplified standard-form agreements designed for small-scale, low-risk, and less complex projects (Priestley and Doosti 2026; Leishman 2023). In South Africa, these include JBCC Minor Works, NEC Short Form, FIDIC Green Book, and GCC Short Form contracts (Lesailane 2022; Muktar 2025). Due to their short duration, they often inadequately address sharp increases in the Consumer Price Index (CPI),

which directly affects material, labour, and transport costs (Tubotamuno and Akidi 2026; Pan et al. 2022; Çollaku and Hajdini 2025; Pejčić et al. 2024). Poor escalation management during planning leads to inaccurate estimates, underpriced bids, and heightened financial risk, while ineffective control during execution results in cost overruns, delays, disputes, and reduced quality outcomes (Nnadi and Najjobyo 2025; Afana et al. 2024; Sanusi 2024). Although tools such as CPAP, BCI, CPI, risk management, and the Iron Triangle exist to manage escalation, many SFC projects still underperform due to weak or inconsistent application of these mechanisms. Similarly, strategies such as life-cycle costing, comprehensive cost planning, and digital adoption remain underutilised or insufficiently effective in SFC contexts (Arslanagic-Kalajdzic 2026; Pourreza et al. 2024). Against this background, this study investigates the impact of pre-contract and contract-stage escalation on SFC project success using a mixed-methods approach, integrating quantitative and qualitative evidence to improve escalation management and support more informed decision-making in construction projects.

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2. Problem Formulation

Construction delivery failure remains a major challenge in South Africa, with studies indicating that up to 60% of short-form construction projects (typically completed within one year) are unsuccessful (Dartey-Baah 2022; Gumusburun Ayalp and Arslan 2025). Key causes include poor scheduling, inadequate planning, and uncontrolled scope changes, with the high failure rate of SMMEs further compounding these outcomes (Akinsolu 2024; Mankge et al. 2024). The construction industry is inherently exposed to uncertainty from fluctuations in labour, materials, and broader economic conditions, all of which drive cost escalation over time (Myers 2022; Zainon et al. 2025). In South Africa and other developing economies, inflation, supply chain instability, and stringent regulatory frameworks intensify these pressures (Andriantomanga et al. 2023; Wolhuter 2022; Msomi and Muzindutsi 2025). Consequently, managing escalation during both pre-contract and contract stages has become critical for project success, particularly in Short Form Contracts (SFCs), which offer limited flexibility for accommodating price changes (Gah 2024). Recent increases in South Africa's Consumer Price Index (CPI) have further elevated financial risks in SFCs without escalation provisions.

Failing to consider escalation during the pre-contract stage leads to inaccurate cost estimates, underpriced bids, reduced profit margins, and a higher risk of project failure (Ahlawat and Singh 2025). During execution, poor escalation management contributes to cost overruns, delays, disputes, and reduced quality outcomes (Mahmud et al. 2026). Therefore, understanding escalation effects is essential for improving cost certainty and project success in SFCs. Although tools such as CPI, BCI, CPAP, risk management, and the Iron Triangle exist, many projects continue to underperform due to weak integration of these mechanisms into planning and execution (Muharremi 2025). Similarly, strategies such as detailed cost planning, life-cycle costing, and digital technologies are recommended, but their effectiveness within SFC contexts remains insufficiently explored.

2.1. Exploring the Impacts of Price Escalation in the Project Lifecycle

Price escalation is a major challenge in the construction industry, affecting project cost, schedule performance, and overall delivery across the entire project lifecycle (Chammout et al. 2024; Afana et al. 2024). During the planning and estimating stage, inaccurate forecasting often results in underestimated budgets and insufficient cost allowances (Pohjonen 2025). In procurement, rising material prices can reduce purchasing power and force contract adjustments or resource reallocation to maintain project objectives (Kumar 2025). During construction, escalation negatively affects contractor cash flow, profitability, and execution efficiency

(Nnadi and Najjobyo 2025). Sudden increases in key inputs such as steel, cement, and fuel commonly lead to cost overruns, delays, disputes, and claims for additional compensation (Habe 2026). From the client perspective, rising costs place pressure on budgets and may threaten project feasibility, particularly in long-duration projects that are more exposed to inflationary risk (Khanna and Bajaj 2025). Effective management of escalation requires strong cost planning, ongoing monitoring of market trends, and the use of recognised indices such as CPI, PPI, and BCI (Raydugin 2024.). Incorporating appropriate escalation clauses within contracts further supports fair cost adjustment. Together, these measures improve cost certainty, reduce disputes, and enhance overall project delivery performance.

2.2. Assessing the Implications of Not Factoring Escalation During the Pre-Contract Stage in Short Form Contracts

Although SFCs are designed for small-scale, short-duration projects, omitting price escalation considerations at the pre-contract stage can significantly compromise project performance and cost certainty (Kumar 2025). Escalation pressures from inflation, fluctuating material and fuel prices, labour cost increases, and supply chain disruptions can still arise even within short project durations (Reynolds 2024). If not properly accounted for during estimating and tendering, contractors may be forced to absorb unexpected cost increases, reducing profit margins, tightening cash flow, increasing financial stress, and, in severe cases, leading to project failure. From the client perspective, the absence of escalation allowances often results in variations, claims, disputes, and delays, particularly where contractors cannot deliver within the agreed contract sum (Chammout et al. 2024). Contractors may also respond by reducing work quality, delaying procurement, or pursuing additional claims, all of which negatively affect project outcomes (Antoniou and Tsioulpa 2024). In addition, weak escalation provisions reduce the reliability of cost estimates and undermine effective pre-contract financial planning. Contractually, the lack of mechanisms for managing market-driven price increases creates an uneven allocation of risk between parties, often increasing disputes and adversarial relationships (Long et al. 2024; Zhuang et al. 2026). Therefore, incorporating escalation measures such as contingency allowances, index-linked adjustments, or simplified escalation clauses at the pre-contract stage can improve cost predictability, enhance fairness, and support more successful SFC project delivery.

3. Research Methodology

The study adopts a mixed-methods research design grounded in pragmatism, enabling the integration of quantitative and qualitative approaches to comprehensively assess the impact of pre-contract and

contract escalation on project success in SFC. Ethical clearance was obtained from the Faculty Research and Innovation Committee (FRIC). A concurrent triangulation approach is applied, using structured questionnaires to collect quantitative data from construction professionals such as quantity surveyors, project managers, contractors, and architects, which is then analysed through descriptive statistics. A total of 22 surveys were returned. In parallel, 15 interviews were conducted. The semi-structured interviews provide qualitative insights into stakeholders' experiences and perceptions of escalation management. Guided by the research onion framework, the study combines both deductive and inductive strategies, linking hypothesis testing with in-depth contextual analysis. A case study design within a cross-sectional temporal framework is utilised, drawing on primary data (questionnaires and interviews) and secondary sources (literature, industry reports, and government statistics). Purposive sampling ensures the selection of knowledgeable participants, while validity is enhanced through triangulation and member checking, and reliability is maintained via standardised data collection procedures and adherence to ethical standards, including informed consent, confidentiality, and voluntary participation. Thematic analysis was applied to the qualitative responses, coding and categorizing them into key themes. Single coding was adopted given the study being profiled as small, a pilot and relying on the researcher's interpretive lens. By integrating descriptive and thematic analyses, the study employed methodological triangulation, enhancing the reliability and validity of the findings by linking statistical trends with practitioner insights.

4. Findings and Discussion

4.1. Quantitative Findings

4.1.1. Escalation measurement tools

A total of 22 questionnaires were completed by the selected respondents. The findings show differing perceptions of escalation measurement tools used in SFCs. Relative Importance Index (RII) was adopted alongside the mean scores. The CPAP recorded the highest mean (3.75; SD = 0.80), indicating it is viewed as the most reliable and practical tool for managing cost escalation during project implementation, consistent

with evidence that contractual adjustment mechanisms improve cost predictability in inflationary environments (Stiegler and Bailey 2022). Risk Management ranked second (3.71; SD = 2.17), reflecting relatively strong perceived usefulness but high variability, suggesting that its effectiveness depends on organisational capacity and implementation quality (Ukandu et al. 2026). The BER/BCI (3.66; SD = 0.60) and CPI (3.22; SD = 1.28) were rated as moderately effective, supporting literature that economic indices are useful for tracking cost trends but may be limited by project-specific conditions (AlTalhani et al. 2024). In contrast, the PPPFA (2.66; SD = 0.52) and the Iron Triangle (2.30; SD = 2.63) received the lowest ratings, indicating they are viewed as less relevant for direct escalation measurement. This aligns with studies suggesting that these frameworks guide procurement and project performance but do not provide explicit mechanisms for managing price fluctuations (Kahanji and Mwanaumo 2023). Overall, the results indicate that respondents prefer practical, formula-based, and management-oriented tools such as CPAP and risk management over broader policy or conceptual frameworks for addressing escalation in Short Form Contracts (Table 1).

4.1.2. Strategies mitigating escalation impacts

The findings indicate that comprehensive cost expenditure planning is perceived as the most effective strategy for mitigating price escalation (mean = 4.75; SD = 0.51; rank 1), reflecting strong agreement that proactive and detailed financial planning is essential for controlling cost variability. This aligns with literature identifying front-end planning as a key driver of project cost performance (AlShaye et al. 2026). Life cycle costing (mean = 3.58; SD = 0.86; rank 2) and cost target setting (mean = 3.50; SD = 0.43; rank 3) were also rated as moderately to highly effective, supporting studies emphasising long-term cost evaluation and benchmarking for financial sustainability (Ali et al. 2024). In contrast, project investment planning and the use of internationally certified contractors (both mean = 2.50) showed moderate influence, suggesting their impact is indirect and context dependent. Lower-ranked strategies, including allocating resources for technological change (mean = 2.40), adopting innovative delivery systems (mean = 2.00), and

Table 1: Cost escalation measurement tools are used to manage impacts during the project lifecycle

Escalation measurement tools	1 = Near minor	2 = Minor	3 = Moderate	4 = Near major	5 = Major extent	Mean score	Standard deviation	Rank
1.CPAP	0	0	4	17	1	3.75	0.80	1
2. BCI	0	2	17	2	0	3.66	0.6	3
3. CPI)	0	2	8	14	0	3.22	1.28	4
4. PPPFA	6	18	0	0	0	2.66	0.52	6
5. Iron Triangle	3	5	14	0	0	2.38	2.63	5
6. Risk Management	1	0	2	18	0	3.71	2.17	2

technology-based mitigation (mean = 1.88), were viewed as least effective (Table 2). This contrasts with emerging research highlighting the potential of digital technologies, though adoption is limited by skills shortages and implementation constraints in developing contexts (Khafiso 2024; Khafiso et al. 2024; Khafiso et al. 2025; Khafiso et al. 2025; Khafiso et al. 2026).

Theme 2: Implications of Omitting Escalation Considerations During Construction

Failing to include escalation clauses exposes project stakeholders to significant financial and relational risks. Quantity Surveyors and Contractors note that without such provisions, projects frequently exceed budgets, sometimes by 20–30%, due to unforeseen market fluctuations. This often places strain on

Table 2: Strategies effectively mitigate escalation impacts in projects for emerging companies in SA

Strategies mitigating escalation impacts	1 = Near minor	2 = Minor	3 = Moderate	4 = Near major	5 = Major extent	Mean score	Standard deviation	Rank
1. Adequate cost expenditure planning	0	0	0	3	19	4.75	0.51	1
2. Life cycle costing	0	0	6	15	1	3.58	0.86	2
3. Setting cost target	0	0	9	13	0	3.52	0.43	3
4. Project investment planning	0	10	12	0	0	2.59	0.35	4
5. Hiring contractors who are certified on international standards	11	0	11	0	0	2.50	2.24	5
6. Provision of resources that support technological change	17	3	0	0	0	1,88	0	7
7. Applying innovative delivery systems to integrate costs	2	20	0	0	0	2.40	0	6
8. Utilizing technology for impact mitigation	0	13	0	7	2	2.88	4.79	5

4.2. Qualitative Findings and Discussions

Theme 1: Impacts of Price Escalation Across the Project Lifecycle

All participants agreed that price escalation significantly affects all stages of construction projects. Quantity Surveyors noted that it introduces uncertainty during planning, often requiring contingencies that reduce tender competitiveness. During execution, escalation disrupts cash flow, triggers variation claims, and leads to delays and disputes, particularly for materials reliant on global supply chains such as steel, cement, and imported finishes. The closeout stage is also impacted through inflated final accounts and reduced stakeholder confidence. Respondents identified escalation as a key risk management issue driven by rising material and energy costs. Contractors confirmed that price increases directly influence procurement, scheduling, and profitability, with delays often caused by supplier disruptions or disputes over variation approvals. Project Managers added that escalation complicates budgeting, extends timelines, and increases contractual conflicts. Additional consequences include reputational damage, legal disputes, and reduced forecasting accuracy. Respondents indicated that many teams lack formal escalation management plans, increasing exposure to financial risk. Mahmud et al. (2026) and Hedin and Hammarstedt (2025) confirm that price escalation remains a persistent challenge across the project lifecycle and that underestimating it during budgeting frequently results in cost overruns and delays

professional relationships, as clients may perceive contractors as inefficient or opportunistic, while contractors feel unfairly burdened by escalating costs. In some cases, projects have been delayed or even abandoned, particularly in both public and private developments during periods of rapid price increases. The consequences extend beyond immediate cost overruns, contributing to schedule delays, reduced quality, contractual disputes, and weakened stakeholder confidence. The public sector is particularly vulnerable, as fixed budgets and rigid administrative processes limit the ability to respond quickly to rising costs. Overall, the omission of escalation mechanisms undermines financial planning, project stability, and trust between parties. Supporting this, Lee (2026) found that contractors operating under fixed-price contracts without escalation clauses are often required to absorb increasing input costs, which can significantly erode or eliminate profit margins.

Theme 3: Investigating how escalation can be incorporated in estimating for short form of contract (SFC)

The findings reveal strong support among construction professionals for incorporating simple, transparent, and quantifiable escalation mechanisms within Short Form Contracts (SFCs). Quantity Surveyors, Contractors, and Project Managers emphasized the importance of using objective market-based indicators such as the PPI, BCI, CPI, BER data, and supplier price schedules to account for short-term cost fluctuations. Respondents advocated for straightforward escalation

clauses and formulae that can be easily implemented without compromising the efficiency and administrative simplicity that characterize SFCs. Although respondents raised concerns about client resistance to perceived cost increases and the challenge of justifying escalation allowances on short-duration projects, most agreed that measurable escalation provisions promote contractual fairness and reduce the likelihood of disputes arising from unforeseen market volatility. The findings also align with recommendations to use indices such as BCI, CPI, and CPAP to support equitable cost adjustments, while recent inflation monitoring data from Statistics South Africa supports the reliability of CPI and BCI as indicators of construction cost trends. Consequently, the study demonstrates that incorporating index-linked escalation provisions offers a practical and balanced approach to managing escalation risk in SFCs, enabling contracts to remain both responsive to market conditions and administratively efficient.

5. Triangulation of the findings

The triangulation of quantitative data, qualitative interviews, and existing literature demonstrates a strong consensus on the importance of proactive cost management in mitigating escalation effects in construction projects. Quantitative results show that tools such as the CPAP formula and risk management are highly rated for measuring escalation, while mitigation strategies like comprehensive cost expenditure planning and life cycle costing are identified as the most effective approaches. These findings are reinforced by qualitative insights, with participants consistently noting that escalation impacts all project phases creating cost uncertainty during planning, disrupting cash flow in execution, and inflating final accounts at project closeout. Interviewees also highlighted that neglecting escalation could lead to substantial consequences, including cost overruns of 20–30%, project delays, disputes, and strained stakeholder relationships. Literature further supports these conclusions, emphasizing that escalation is a persistent challenge affecting both project performance and financial stability. The triangulated findings also reveal a notable gap between the acknowledged potential of technological and innovative solutions and their limited practical adoption, as traditional cost planning methods remain the preferred approach among respondents. Overall, the

integrated results confirm that while reliable measurement tools and structured planning strategies are crucial, their effectiveness relies on early incorporation during the pre-contract phase, and ongoing risk management.

6. Conclusion and Further Research

In summary, this study demonstrates that both pre-contract and contract-stage escalation significantly influence the success of SFCs, particularly in terms of cost, time, and quality performance. The impact is often amplified in SFCs where escalation is insufficiently considered, compounded by delays between procurement and award processes that contribute to inefficiencies and increased financial exposure. Findings show that inadequate escalation planning at the pre-contract stage leads to inaccurate cost estimates and higher financial risk, while weak management during execution results in cost overruns, delays, disputes, and strained stakeholder relationships. The study highlights the importance of reliable escalation tools such as the CPAP formula, alongside effective risk management practices to improve cost predictability. Strategies including comprehensive cost expenditure planning, life cycle costing, and realistic cost target setting were identified as highly effective in mitigating escalation impacts. However, the adoption of digital and innovative solutions remains limited in practice. Overall, triangulation of quantitative, qualitative, and literature evidence confirms that effective escalation management requires a proactive and integrated approach across the project lifecycle. Early consideration of escalation before contract finalisation, supported by strong institutional frameworks and stakeholder collaboration, is essential for improving outcomes. The study contributes to both theory and practice by providing empirical insight into escalation dynamics in SFCs and emphasising the need for capacity building, policy alignment, and improved industry awareness.

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