

REIMAGINING PROCUREMENT FOR DOMESTIC CONSTRUCTION CLIENTS

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ABSTRACT

This study critically examines the impact of procurement systems utilised in domestic housing projects in Sri Lanka. A comprehensive literature review was undertaken to establish the theoretical foundation of standard procurement systems, with particular emphasis on the Traditional and Design and Build (D&B) approaches. Their respective strengths and limitations were analysed in relation to the achievement of time, cost, and quality objectives. A qualitative case study approach was adopted, examining three domestic housing projects across the pre-construction, construction, and post-construction phases. Semi-structured interviews were conducted with key project stakeholders to identify challenges associated with existing procurement practices. The findings reveal significant weaknesses in informal procurement approaches, including inadequate cost planning at the design stage, an over-reliance on architectural drawings for construction execution, and the limited application of competitive tendering. These shortcomings adversely affect cost control, scheduling, and overall project performance. The study concludes that the adoption of a modified procurement framework could enhance the achievement of time, cost, and quality objectives in domestic housing construction projects in Sri Lanka.

Keywords: Case studies, Cost–Time–Quality Performance, D&B procurement systems, Separated Procurement System, Sri Lanka, Way forward.

1. INTRODUCTION

Shelter is one of the basic needs of all human being and development of domestic housing construction industry is main parameter that measures the living standards of the public of any country (Ismail et al., 2024). Private owners, looking for a more efficient method of realising residential projects, since most of layman nature clients procure their own housing construction through a D&B procurement system that provides smooth progress during the preconstruction stage and post construction stage due to less risk with the employer. Among the available procurement methods, such as Traditional procurement and Turnkey systems, these are the most used approaches in residential construction. However, under current procurement systems, clients are often unable to achieve their expected requirements. Despite limited research addressing the suitability of procurement systems in residential construction. Therefore, the research focusing on the necessity of modified procurement system for domestic housing construction is become more vital due current practice of informal method of procurement strategies (Ofori, 2012).

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Procurement system selection plays a significant role in determining the success of construction projects. Ratnasabapathy and Rameezdeen (2007) identified that client requirements are among the most influential factors affecting procurement decisions, emphasising the importance of selecting procurement method that aligns with project objectives. Furthermore, Chanudha et al. (2017) highlighted that project characteristics such as cost certainty, time constraints, and complexity should be carefully considered when choosing a procurement system. Recent studies have also shown that decision-support frameworks can assist clients in selecting appropriate procurement methods and improving project outcomes (Ingle et al., 2025). However, most existing studies focus on large-scale or institutional projects, while limited attention has been given to domestic construction clients in Sri Lanka. Therefore, there is a need to develop a procurement selection framework specifically tailored to the requirements of domestic house-building clients.

Consequently, selecting the most suitable procurement system for residential construction remains a key challenge in the construction industry. A practice of appropriate discipline is a major feature that adapts to any successful procurement system and directly contributes to the sustainable development of any procurement system (Lawrence, 2000). The domestic housing construction industry uses informal procurement methods because of the layman nature of most domestic construction customers. Thus, implementing a suitable procurement system has become essential for the domestic housing construction industry. Further, when look at the global construction context, time, cost and quality of the construction projects become prominent concern and they provide best worth for the project (Tohidi, 2011).

A procurement system primarily concerns the effective delivery of construction projects through the provision of goods, services, and consultancy inputs required to achieve project objectives (Sears et al., 2008). Therefore, several techniques that associated with procurement selection criteria have been implemented by professionals to reach more informed decisions on procurement selection over last two decades (Luu et al., 2003). Further procurement activities range from identifying needs to closing the project, making it ideal for integrating the organization's strategic directions and due to that, academics and industry professionals have widely recognised the strategic importance of the well organised procurement system for the construction project (Rajeev. et al., 2013). Moreover, achieving the required time, cost and quality targets are linked with selected procurement strategy. However, determination of suitable procurement systems is the major challenge for the construction stakeholders, which may be faced at the preconstruction stage. Procurement of the construction project defines as a key process in a construction project that manages and creates the contract (Rajeev. et al., 2013). Consequently, the selection of an appropriate procurement system plays a critical role in shaping project outcomes and overall construction performance.

Therefore, this study aims to critically examine the limitations of currently adopted procurement methods in domestic housing construction and to identify necessary improvements from the client's perspective. The findings are expected to contribute towards developing more suitable procurement approaches that enhance project efficiency and client satisfaction in the residential construction sector. However, the scope of the study is limited to two-storey domestic housing projects with construction costs ranging between Sri Lankan Rupees 15 million and 20 million.

2. LITERATURE REVIEW

The construction industry is widely recognised as a key driver in improving the standard of living of a population and within this sector, residential development is considered a critical determinant of the quality of life and overall well-being of a country's citizens (Lawrence, 2000). The quality of design and construction in residential projects directly influences the efficiency with which productive activities are conducted and essential services are delivered.

The question, "Should housing be prioritised as part of a country's development strategy?" has been widely debated among developers, economists, and policymakers. Housing experts consistently emphasise the importance of residential construction in supporting economic development, citing its direct and indirect linkages with other sectors of the economy. In particular, the domestic housing industry plays a major role within the construction sector, due to its close interactions with related economic activities and its contribution to employment, investment, and social well-being (Ewing & Wang, 2005).

Residential construction has become increasingly significant as private homeowners seek more efficient and reliable methods of delivering their housing projects. However, many domestic clients possess limited technical knowledge of construction processes and procurement strategies (Chan & Ann, 2005). As a result, housing projects are frequently procured through informal arrangements or simplified forms of D&B approach, where responsibilities for design and construction are largely entrusted to a single party. While such arrangements are often perceived to facilitate smoother coordination during the pre-construction and construction stages and to reduce the client's involvement and perceived risk, they may create challenges in terms of cost control, quality assurance, and transparency in project delivery (Chan & Ann, 2005).

Ghadamsi and Braimah (2012) highlighted that among the commonly available procurement methods in the construction industry, Traditional procurement and Turnkey approaches are widely adopted in residential construction. However, in practice, these systems are often implemented in modified or informal forms, which may limit their ability to deliver the expected project outcomes. Consequently, clients frequently experience difficulties in achieving their desired objectives related to time, cost, and quality performance.

Despite the importance of procurement strategies in determining project success, limited research has specifically examined the suitability of procurement systems for domestic housing construction, particularly from the perspective of private clients. This indicates a significant research gap in understanding how procurement practices influence the performance of residential construction projects.

Existing literature on construction procurement has predominantly focused on large scale commercial, infrastructure projects. Although this paper provides valuable insight into procurement systems and project delivery approaches, limited attention has been given to procurement practice adopted by domestic construction clients. Furthermore, there is a lack of context specific research examining procurement system within the Sri Lankan domestic construction industry.

Consequently, a significant gap remains in understanding procurement approaches that are appropriate for domestic construction clients in Sri Lanka. This study, therefore, seeks

to address this gap by exploring procurement practices within the local domestic construction context.

3. RESEARCH METHODOLOGY

The research process for this study on improving procurement approaches in domestic housing construction in Sri Lanka is presented in Figure 1.

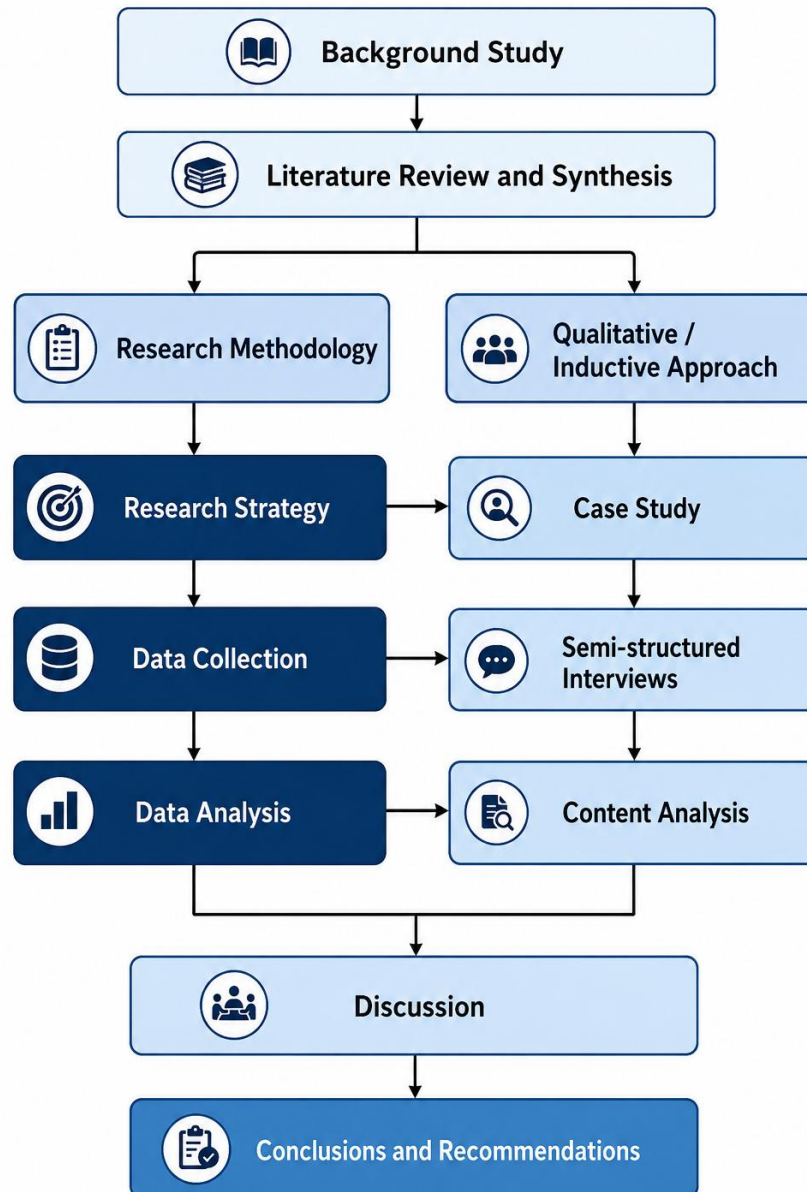


Figure 1: Research methodology

Generally, research approach is a process that provides necessary instructions and guidance on achievement of specified research aim and objectives (Smith et al., 2002). According to the types of research approach, there are two fundamental types of research approaches i.e. (i) qualitative approach and (ii) quantitative approach (Kothari., 2004) (Kothari, 2004). The qualitative approach is chosen, when the field of research is based

on values, understandings, beliefs, perceptions, etc. to get new discoveries. In addition, it demonstrates the subjectivity of opinions and behaviors (Cresswell, 2013). Conducting the data collection following a qualitative approach is the most suitable way to review the unclear problems related to the procurement strategies used in residential housing construction with providing strong evidence on real nature of procurement practice in domestic housing construction in Sri Lanka. A qualitative approach is suitable for this study due to its focus on procurement practices in residential housing construction.

A case study strategy was adopted to gather in-depth data on procurement practices used in domestic housing construction in Sri Lanka. Semi-structured interviews were conducted with three domestic housing clients using a pre-prepared guide, and the data were analysed by comparison with relevant literature.

It was required to identify the procurement strategy that are used in residential housing construction. Yet, the most of domestic housing constructions have not been managed by the standardised method of procurement, which are currently practicing in the construction industry. In addition, the available literature is mainly focused on large-scale projects since it is impossible to conduct a proper questionnaire survey and to follow quantitative data analysis. Therefore, requirement of new procurement strategy to the residential housing construction is established through using the in-depth analysis on the real three (03) residential housing construction cases accompanied with more qualitative data. As a result, qualitative approach was essential to be selected.

Accordingly, a qualitative case study strategy was employed to gain detailed insights into procurement practices in domestic housing projects. Selecting an appropriate data collection method was essential for addressing the research objectives, which focused on critically examining the weaknesses and challenges faced by clients under existing procurement systems and identifying potential improvements across the various stages of domestic housing projects.

Semi-structured interviews were conducted with three domestic housing clients (refer Table 1), each representing a unique case of small-scale, owner-driven construction in which the client serves as the principal decision-maker throughout the procurement process. This approach ensured the collection of rich, context-specific data, reflecting the nuanced realities of client experiences in domestic housing procurement.

Table 1: Case study coding reference

Case No	Case reference	Respondent reference
Case 01	A	A1
Case 02	B	B1
Case 03	C	C1

Participants were purposefully selected as key informants due to their direct involvement in procurement decisions, thereby providing experiential knowledge crucial to understanding current practices and their limitations. The case study approach is particularly suitable in this context, as it prioritises depth of understanding and contextual relevance over sample size. Small, carefully chosen samples are widely accepted in qualitative research when participants possess specific, experiential insights directly

relevant to the research problem (Cresswell & Poth, 2018; Yin, 2018). By focusing on a limited number of cases, the study was able to explore procurement challenges in a detailed and holistic manner, enhancing the validity and applicability of the findings within the domestic housing sector.

Data analysis is a critical stage in qualitative research, as it enables the interpretation of collected information and the generation of insights relevant to addressing the research problem. In this study, a manual content analysis approach was adopted to systematically examine the data obtained from semi-structured interviews. The analysis was guided by thematic headings developed from the interview protocol, which reflected the key aspects of procurement practices and client experiences in domestic housing construction.

The process involved multiple stages. First, the interview transcripts were thoroughly reviewed to achieve familiarity with the data. Significant statements and observations were then identified and categorised under the predetermined thematic headings. Subsequently, these categories were further refined and coded to capture emerging patterns, recurring challenges, and contextual nuances. This iterative process facilitated the identification of key themes related to procurement inefficiencies, client decision-making, and areas for improvement in existing procurement systems.

By adopting this structured content analysis approach, the study ensured that interpretations were grounded in the participants' experiential knowledge, enhancing the credibility, depth, and relevance of the findings. The systematic coding and thematic organisation of the data allowed for a comprehensive understanding of current procurement practices, supporting the development of practical recommendations for improving domestic housing construction in Sri Lanka.

4. STUDY ANALYSIS AND FINDINGS

In this case study, three contractor quotations were obtained in line with standard procurement practices in the Sri Lankan construction industry to ensure competitiveness and transparency (refer Table 2).

Table 2: The contractor selection for major work stages in Cases A, B, and C.

Case	Work description	Selection of contractor
Case A	Foundation works and super structure columns	Selected a contractor who has previous experience with the client
	Slab concreting works	Selected a D&B contractor
	Tilling works	Selected a specialised contractor after evaluation of three quotations
	Plastering and painting works	Selected a specialised contractor after evaluation of three quotations
	Timber works (Door and windows)	Selected a specialised contractor after evaluation of three quotations

Case	Work description	Selection of contractor
Case B	Roof works	Selected a D&B contractor
	Entire civil construction works	Selected a suitable contractor after observing previous project that has been done by the contractor
	Tilling works	Selected a specialised contractor after evaluation of three quotations
	painting works	Selected a specialised contractor after evaluation of three quotations
Case C	Timber works (Door and windows)	Selected a specialised contractor after evaluation of three quotations
	Entire civil construction works	Selected a suitable contractor after observing previous project that has been done by the contractor
	Tilling works	Selected a specialised contractor after evaluation of three quotations
	painting works	Selected a specialised contractor after evaluation of three quotations
	Timber works (Door and windows)	Selected a specialised contractor after evaluation of three quotations

The evaluation process considered multiple criteria, including cost, technical capability, previous project experience, and resource availability. Although the lowest quotation offered initial cost advantages, the selected contractor demonstrated greater expertise and a stronger track record in delivering similar projects. This decision highlights the importance of adopting a value-based procurement approach rather than relying solely on the lowest bid. Such an approach helps to mitigate potential risks related to quality, delays, and performance, which are critical factors in the successful delivery of construction projects (Procurement regulations for burrowers, 2016).

4.1 PROCUREMENT CHALLENGES FOR SRI LANKAN DOMESTIC HOUSING CONSTRUCTION

Domestic housing clients face significant procurement challenges from project inception to completion, as illustrated in Figure 2.

Figure 2 highlights key procurement challenges in domestic housing construction projects, from briefing to completion. The main issues include the absence of detailed drawings, reliance on informal tendering, and limited cost planning awareness.

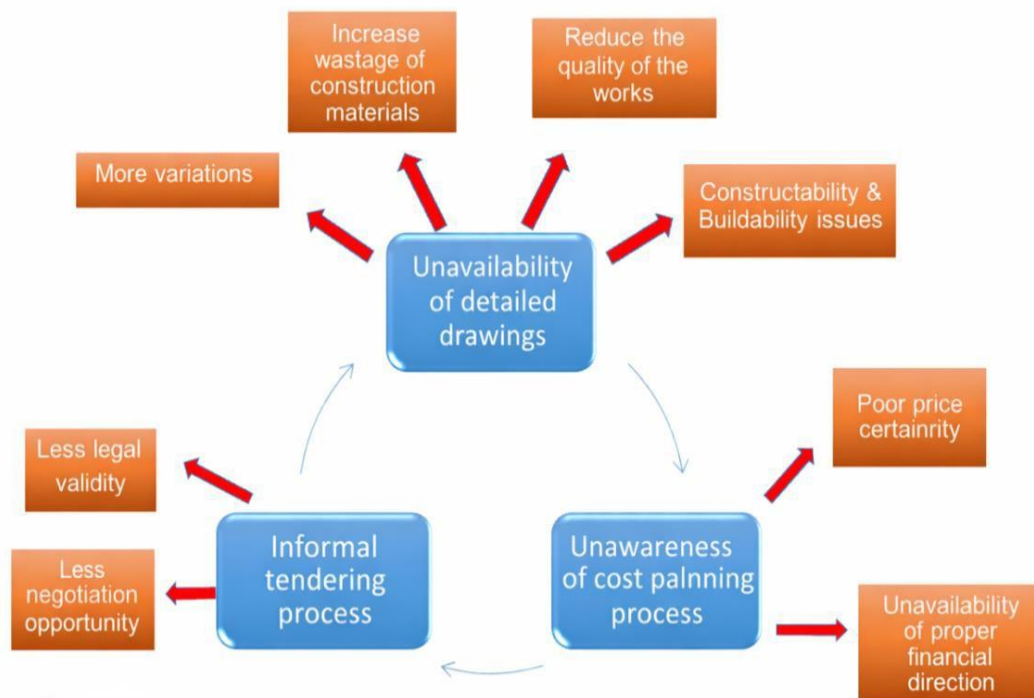


Figure 1: Procurement challenges in domestic housing construction

These weaknesses contribute to material wastage, construction quality problems, variations, reduced transparency, and poor financial control, demonstrating the cumulative impact of early-stage procurement deficiencies. The finding emphasises the need for structured procurement approaches, improved technical documentation, and strengthened cost planning to enhance project outcomes in the Sri Lankan domestic housing sector.

The findings from the three case studies revealed that fluctuations in construction material prices considerably increased the overall cost of domestic housing construction projects. Based on the procurement methods adopted in these projects, a significant proportion of the financial risk was transferred to the clients. As a result, cost overruns and financial uncertainty became major challenges faced by domestic housing construction clients.

Furthermore, the analysis identified that most domestic housing projects operate through informal procurement practices rather than standard procurement systems commonly used in the formal construction industry. Clients frequently relied on verbal agreements, direct labour arrangements, and contractor selection based on personal relationships or recommendations. These practices often lacked formal contractual arrangements, proper cost control mechanisms, and effective risk allocation procedures. Consequently, clients became more vulnerable to construction price fluctuations and unexpected project expenses.

Existing literature emphasises that an appropriate procurement system is essential for achieving cost certainty, proper risk allocation, and efficient project delivery. However, the findings indicate that domestic housing clients possess limited awareness regarding formal procurement approaches such as Traditional Procurement and D&B. Therefore,

the theme of Financial Risk Exposure through Informal Procurement Practices emerged as a significant issue within the domestic housing construction sector.

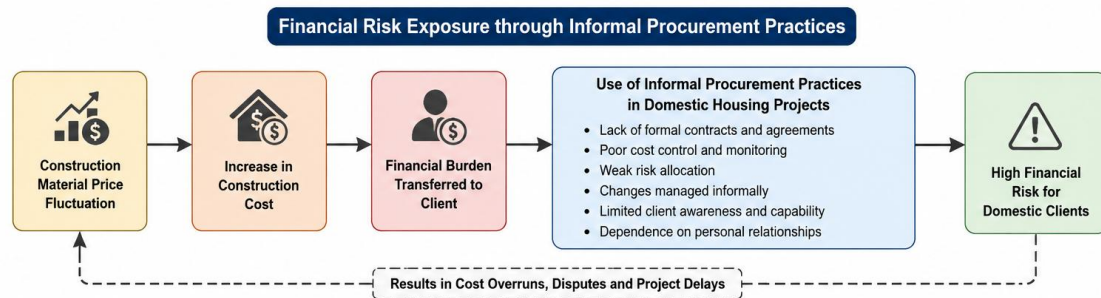


Figure 5: Procurement Processes – Traditional, Design & Build (D&B) and Informal Procurement

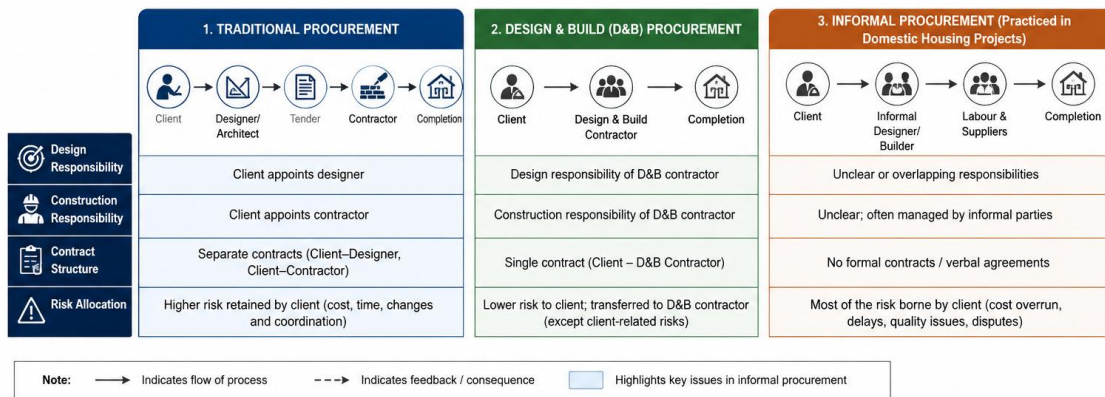


Figure 3: Overall risks arising from informal procurement practices

The study identified that domestic housing construction clients are highly exposed to financial risks due to the use of informal procurement practices. The absence of formal contracts, inadequate cost control mechanisms, poor risk allocation procedures, and limited client awareness increase client vulnerability to material price fluctuations and project cost escalation.

4.2 COMPARISON BETWEEN PROCUREMENT SYSTEM AND ESSENTIAL PROCUREMENT REQUIREMENTS OF DOMESTIC HOUSING CONSTRUCTION PROJECTS

Figure 4 indicates that most domestic housing clients do not prioritise cost control techniques during the design stage. However, existing literature emphasises the critical role of cost planning in the successful completion of construction projects (Paul & Peter, 1996). Many domestic clients consequently experience uncertainty regarding whether their house can be completed within the allocated budget. The case studies revealed a common error: clients often fail to give sufficient attention to project costs during the design phase. This oversight represents a significant challenge for Sri Lankan domestic housing clients. To address this issue, procurement systems for domestic housing projects should incorporate robust cost control mechanisms at the design stage, rather than relying solely on cost monitoring during construction.

Regarding contractor selection in domestic housing projects, the negotiated method is predominantly used. In Cases A, B, and C, no formal tendering process was followed.

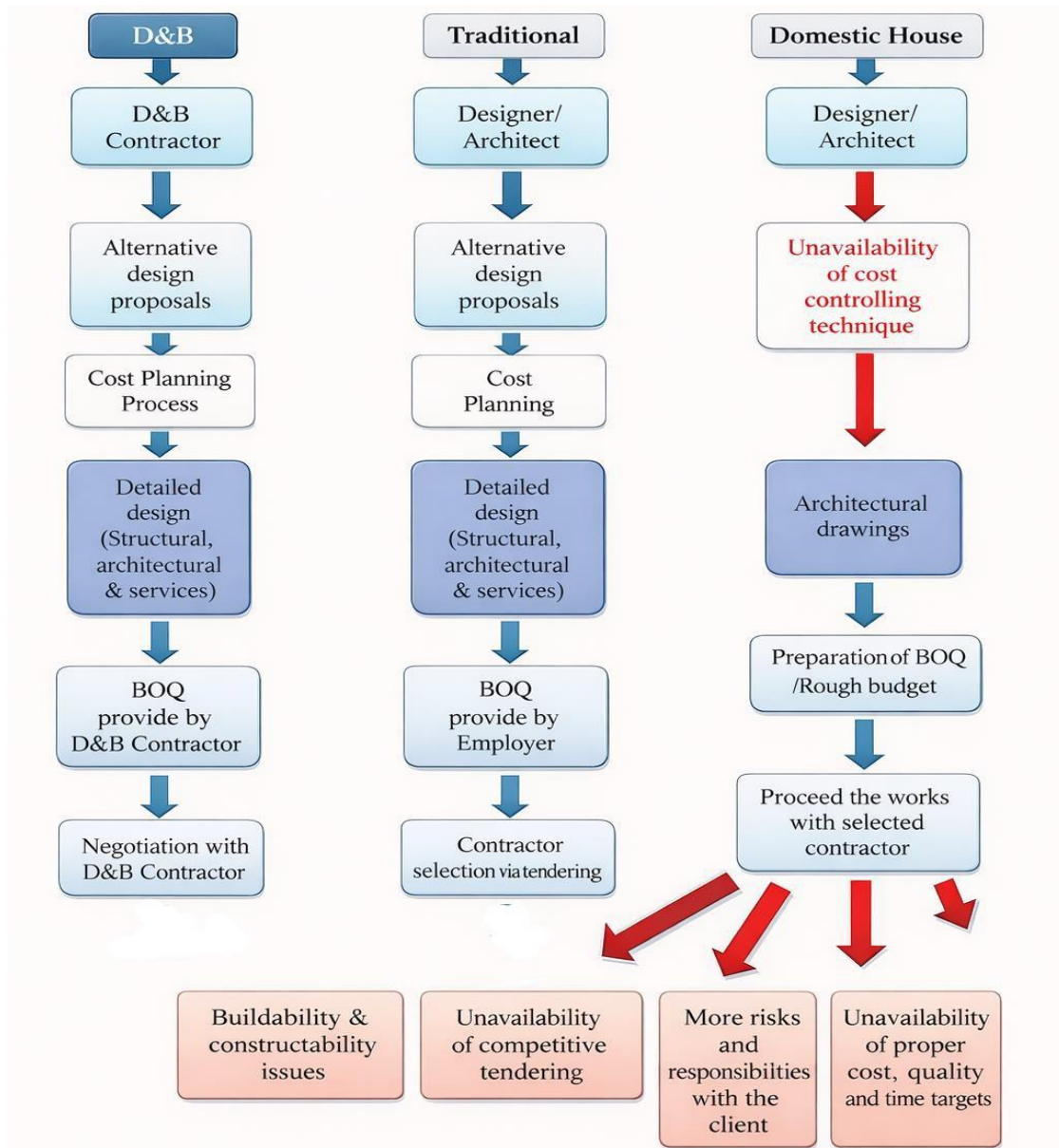


Figure 4: Comparison between procurement system and essential procurement requirements of domestic housing construction projects

The main weakness identified in the contractor selection process was the informal approach adopted for Cases A1, B1, and C1. Consequently, clients encounter numerous challenges both recognised and unrecognised relating to cost, quality, and schedule performance. In traditional procurement approaches, contractor involvement during the pre-construction stage is minimal. In the context of domestic housing, where clients often have limited technical knowledge, this low level of early involvement can lead to constructability and buildability issues during post-construction.

Figure 5 presents a more structured and robust procurement approach specifically designed to address the needs of domestic housing clients and improve project outcomes.

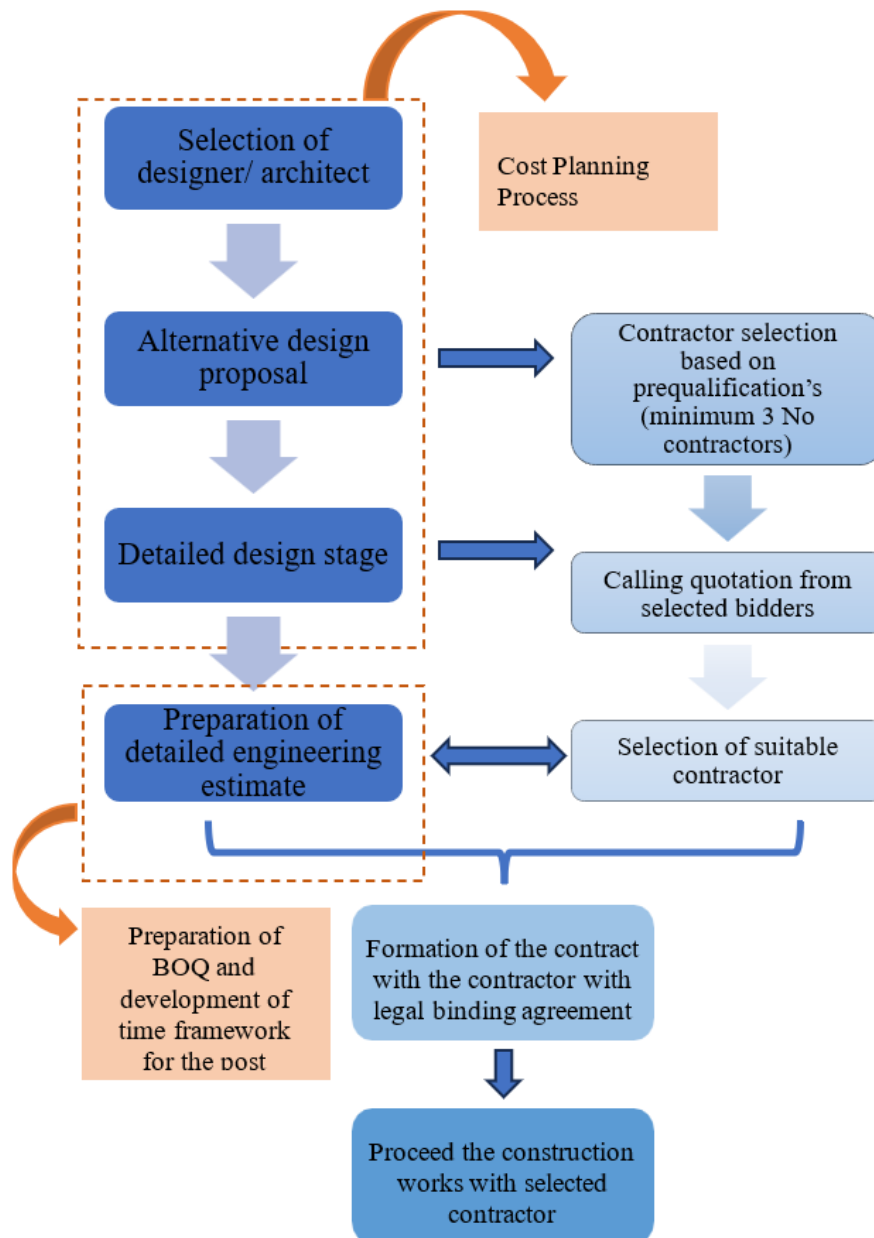


Figure 5: Proposed modified procurement framework

Existing research supports the importance of early contractor engagement: Lappalainen et al. (2022) argue that contractor involvement from the design stage enhances quality standards through the application of specialised expertise and collaborative decision-making. Accordingly, selecting an appropriate contractor during the design phase is essential to ensure smoother project execution and improved outcomes in domestic housing construction, particularly given the layman nature of most clients. The primary objective of domestic housing clients is to complete their projects within the expected time, cost, and quality targets. However, due to the unstructured and informal nature of procurement practices in the domestic housing construction industry, clients frequently encounter significant challenges during both the pre-construction and post-construction stages.

Accordingly, appropriate quality standards can be established through the development of a detailed Bill of Quantities (BOQ) and comprehensive design during the pre-construction stage. In addition, preparing a proper construction schedule, allocating suitable time periods for each activity, and pre-identifying project milestones—against which progress can be monitored—are essential modifications that should be incorporated into the existing informal procurement system in the domestic housing construction industry. Early involvement of suitable contractors during the design phase is another key feature of the proposed procurement system. This approach facilitates lower tender prices and minimises design variations, as well as constructability and buildability issues, due to the presence of specialised contractor knowledge from the outset. Furthermore, forming contracts based on legally binding agreements helps to reduce disputes during the post-construction stage.

By integrating these modifications into the existing informal procurement system, a well-structured procurement approach can be established that effectively meets the requirements of domestic housing clients, ensuring improved outcomes in terms of time, cost, and quality.

5. CONCLUSIONS

This study demonstrates that most domestic housing clients in Sri Lanka rely on informal procurement methods, which often result in disputes, inefficiencies, and challenges in meeting time, cost, and quality objectives due to clients limited technical knowledge. Analysis of procurement practices from the briefing stage to project completion revealed several critical weaknesses, including insufficient cost planning during the design phase, lack of a well-defined construction schedule, limited legal enforceability of contracts, and reliance on architectural drawings for procuring the entire project. To address these issues, a modified procurement system is proposed, tailored to the domestic housing context. Key features include structured cost planning, early contractor involvement, legally binding contracts, detailed pre-construction documentation, and milestone-based progress monitoring. Implementation of this approach is expected to enhance project efficiency, improve client satisfaction, reduce disputes, and ensure better adherence to time, cost, and quality objectives. The study contributes to both theory and practice by providing evidence of the limitations of informal procurement in domestic housing and demonstrating how modifications to standardised procurement systems can be adapted to the local context. Future research could expand this framework to larger or multi-storey residential projects, explore contractor perspectives, and assess the long-term impact of the proposed procurement modifications on project performance and sustainability in the domestic housing sector.

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