

CHALLENGES FOR COMMERCIAL MANAGEMENT IN THE CONSTRUCTION INDUSTRY: CASE FOR SRI LANKA

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ABSTRACT

Commercial management significantly contributes to preserving the value of construction projects and sustaining the industry. The fundamental purpose of commercial management is creating and maximising value through informed decision-making and overseeing the project. However, despite its critical importance, there exists a significant research gap regarding the challenges faced in effectively managing the commercial aspects of construction projects. Therefore, this study aims to investigate the challenges of commercial management in construction projects. Quantitative research approach was adopted to fulfil the aim of the study. The questionnaire survey was conducted among professionals in the construction industry which were chosen using the snowball sample method. Accordingly, an online questionnaire form was distributed among the professionals and collected seventy responses. Findings indicate that commercial management plays a pivotal role in project success, with parameters such as cost performance and anticipated profit levels being strongly influenced by effective commercial practices. However, challenges such as poor communication, change management, and external market forces pose significant obstacles. The study underscores the importance of addressing these challenges to enhance project outcomes and advocates for the adoption of innovative approaches to bolster commercial management practices in the construction industry. By shedding light on the unique challenges faced by commercial managers in Sri Lanka, the paper contributes to a deeper understanding of how cultural, regulatory, and economic factors influence commercial management practices in different contexts. This knowledge expansion facilitates cross-contextual comparisons and strengthens the theoretical foundations of commercial management in the construction industry.

Keywords: *Challenges; Commercial Management; Construction Industry.*

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1. INTRODUCTION

Many researchers emphasise commercial or business success as a key ingredient of successful construction projects (Moradi & Kähkönen, 2022; Ramlee et al., 2016). Shenhar and Dvir (2007) define commercial or business success as managing the profit margins of a project. Lowe (2013) emphasises the importance of commercial management in safeguarding the profits, minimising the costs, maximising the income and managing the cash flow. Popov et al. (2022) define commercial management as an integral process of management systems that interconnects economics, and financial processes to efficiently utilise resources to produce intended commercial results. Moreover, commercial management is considered the intermediary link between traditional project management and organisational theories centred on business and financial administration (Perera et al., 2016).

The fundamental purpose of commercial management is creating and maximising values through informed decision-making and overseeing the project (Royal Institution of Chartered Surveyors [RICS], 2017). Many researchers have highlighted different techniques and practices that provide successful commercial control of projects. Among them, viewing the big picture, thinking laterally, risk analysing, converting required work into packages, negotiating, and communicating are significant attributes of commercial management (Lowe & Leiringer, 2006). Besides, RICS (2016) identifies estimating, value engineering, supply chain management, valuing work, cost value analysis, cash flow management and commercial decision-making as effective commercial management practices. Thus, commercial management is vital to ensure financial and contractual success while liaising with key project stakeholders (Linkoaho et al., 2020). Moreover, an organisation could exceed expected returns and build improved client relationships with improved commercial control and management (RICS, 2016). However, despite its critical importance, there exists a significant research gap regarding the challenges faced in effectively managing the commercial aspects of construction projects. Therefore, this paper aims to investigate the challenges of commercial management in construction projects in Sri Lanka.

First, a comprehensive literature review on commercial management, the role of commercial management in the construction industry and challenges for commercial management of construction projects is presented. Subsequently, the methodology utilised in this study is presented. Following this, the research findings and their corresponding discussion are outlined, culminating in the presentation of conclusions.

2. LITERATURE REVIEW

2.1 COMMERCIAL MANAGEMENT

The term commercial management is predominantly used in electronic and telecommunication, energy and oil, defence and aerospace, financial services, pharmaceutical and healthcare, engineering and construction sectors (Lowe, 2013). However, Lowe and Leiringer (2006) state that commercial management is ambiguous in its literal interpretation, making it challenging to establish a clear boundary due to its wide practical applicability. Many authors and professional bodies have defined commercial management with different interpretations as shown in Table 1.

Table 1: Definition of commercial management

Definitions	Reference
Commercial management is an integral process of management systems that interconnects economics, and financial processes to efficiently utilise resources to produce intended commercial results.	Popov et al. (2022)
Commercial management is an autonomous discipline which presents organisational theories to bond with conventional project management frameworks in project-based organisations.	Dalcher (2017)
Commercial management encompasses contractual and commercial activities, functions and the entire process from project inception to completion in individual firms and project organisations.	Lowe & Leiringer (2006)
Commercial management is a controlling and administrating process of financial transactions with the prime motive of generating profits.	Lowe et al. (1997)

According to the various interpretations summarised in Table 1, the essence of commercial management is focusing on integrating financial and economic transactions with organisational goals.

2.2 ROLE OF COMMERCIAL MANAGEMENT IN CONSTRUCTION PROJECTS

Commercial management plays a pivotal role in the commercial and financial success of a construction project (RICS, 2017). The unique characteristics of the construction industry including project based and fragmented structure, dynamic nature, elevated level of risks and substantial investments, necessitate the adoption of a distinctive set of commercial management practices (Assaad et al., 2020). Moreover, Lowe and Leiringer (2006) claim that in the construction-related literature, there are two predominant interpretations of commercial management: the first considers commercial management to be a subset of project management about specific projects; and the second interchanges the terms 'quantity surveying' and 'commercial management. Nevertheless, researchers and professional bodies have developed numerous definitions for the commercial management of construction projects as indicated below in Table 2.

Table 2: Definition of commercial management in construction projects

Definition	Reference
Commercial management involves project valuation, change control, financial accounting and controlling and subcontract administration.	Pearson (1996)
Commercial management in construction entails budgeting and forecasting, interim valuation, subcontract administering, contract management, cost value analysis and teamwork and partnering.	Walker & Wikie (2002)
Commercial management in construction pertains to financial oversight of projects, entailing regular monitoring and reporting of cash flow and profitability. This process involves evaluating and advising financial implications and recommending appropriate management measures.	RICS (2017)

Accordingly, commercial management is a broad field with a variety of responsibilities specific to certain industries, notably in the construction industry, where commercial management is particularly focused on the complexities of project financials and coordination. Pearson (1996) highlights the breadth of commercial management, citing its essential involvement in several project aspects, including project valuation, change control, financial accounting and controlling, and subcontract administration. Walker and Wilkie (2002) offer a more narrowly focused viewpoint that is unique to the construction industry emphasising crucial tasks; forecasting, budgeting, managing subcontracts, and cooperating with others, stressing the significance of financial planning and teamwork in project success. In addition, RICS (2017) goes into further detail about the financial

oversight component of commercial management in the construction industry, recognising the need for consistent monitoring, cash flow reporting, and assessing financial implications to guide management choices. Overall, these definitions highlight the complexity of commercial management and how important it is to ensure successful project execution through careful financial planning, strategic coordination, and ongoing monitoring. Perera et al. (2016) visually represent these cost and commercial management practices with reference to RIBA Plan of Work 2013. According to him, the project initiates with the commercial decision of investment. Afterwards during the preconstruction stages cost modelling is undertaken until the pre-tender estimate is formulated, and the post-tender estimate undergoes cost analysis. Subsequently, in the construction stage, project planning, maintaining cash flow, interim valuations, establishing cost control systems, change control, and financial reporting activities are undertaken. Ultimately after the construction stage, final accounts are prepared marking the closeout of the project, and operation and maintenance cost control systems are implemented continuing until the end of the useful lifetime of the project. Hence, commercial management plays a significant role throughout the lifecycle of the project.

2.3 CHALLENGES FOR COMMERCIAL MANAGEMENT OF CONSTRUCTION PROJECTS

The unique characteristics of the construction industry and the management practices in the industry have caused many challenges for commercial management (Chapman, 2016; Navon, 2005). Numerous studies have highlighted various challenges. Table 3 outlines the challenges in the commercial management of construction projects.

Table 3: Challenges of commercial management

Challenges	Definition	Reference
Dynamic, fragmented, and inherently complex characteristics of construction projects	These intrinsic characteristics of the construction industry lead to many problems such as poor communication and coordination, disputes among parties, unpredictable environment and cultural issues. As a result, many commercial problems occur concerning time overruns and delays.	1,2,3
Influence from external market forces	The construction industry is highly sensitive to external market forces - political, economic, environmental, and technological factors, to name a few. Alterations in these factors, such as natural disasters, unforeseeable ground conditions, changes in governmental policies and legislation, demographic shifts affecting labour demand, inflation, and price fluctuation, have a direct effect on commercial transactions, resulting in adjustments to costs and project programs.	4,5
Inefficient administration of data	The construction sector generates a huge amount of data that stakeholders are required to exchange. The administration of this data is necessary to prevent project failure and disputes. Unfortunately, due to the volume and complexity of data, the majority of projects fail to effectively manage it, resulting in ineffective planning, execution, and risk management.	6,7
Change management	Project changes are inevitable in construction projects and possess an unexpected character. These project changes have an impact on several commercial concerns, such as increasing costs and delays in project completion. These kinds of concerns may raise disputes.	8,9
Inefficient tools to analyse the project performances	Existing project performance measurement tools primarily focus on financial aspects like return on investment and profit per unit, but have inadequacies like lagging metrics, lack of strategic focus, and insufficient data on quality, relationships, and environment. Traditional adversarial approaches are being replaced with partnering approaches to achieve win-win results and reduce confrontation.	10,11

[1] (Chapman, 2016) ; [2] (Nasrun et al., 2014) ; [3] (Khan et al., 2016); [4] (Sun & Meng, 2009); [5] (Wu et al., 2004); [6] (Martínez-Rojas et al., 2015); [7] (Tanga et al., 2022); [8] (Rahman et al., 2022); [9] (Chen et al., 2015); [10] (Navon, 2005); [11] (Cheung et al., 2004)

As discussed in Table 3, the commercial management of construction projects encounters significant challenges due to distinct features of construction projects, such as their fragmented and dynamic nature, susceptibility to external forces, and involvement of multiple parties. The combined impact of these challenges can result in financial losses and timely completion of the project, ultimately jeopardising the overall success of construction projects. Researchers have proposed numerous management theories and technological solutions to overcome these issues. Out of those solutions, many studies have identified lean as a better management philosophy based on value-adding for construction management (Koskela, 2020; Li et al., 2020). Further Babalola et al. (2019) emphasise that the adoption of lean practices in construction projects helps to predict costs and manage budgets, ensuring that financial objectives are met with fewer changes and delays. Similarly, commercial management also adds financial value to construction projects to meet the financial objectives of the project. (Lowe & Leiringer, 2006; RICS 2017). Therefore, a thriving need arises to empirically investigate the challenges for commercial management in Sri Lankan construction industry.

3. METHODOLOGY

The study aims to investigate the challenges of commercial management in construction projects. Quantitative research allows data comparability, reproducibility of results, independence from the observer, and analytical simplicity by breaking down the topic into its most basic components (Porte, 2010). Therefore, the study adopts a quantitative approach to fulfil its intended objectives. First, a comprehensive literature review is conducted, analysing the commercial management practices in the construction industry to identify the challenges for commercial management.

A questionnaire is a type of quantitative research that conducts systematic investigations of social issues utilising statistical or numerical data (Lewin, 2005). Hence, this research has used a questionnaire survey through Google Forms since it processes a user-friendly interface which makes it easier for respondents to feed data and offers several data analysing options to achieve the aim of the study. The questionnaire survey was conducted among professionals in the construction industry which were chosen using the snowball sample method. Accordingly, an online questionnaire form was distributed among the professionals and collected 70 responses. Data analysis is the systematic arrangement and classification of data via the use of advanced assessments and interpretations, intending to reveal noteworthy implications, regularities, and motifs within observable and auditory information (Creswell & Creswell, 2005). The quantitative data was analysed using RII to derive a correlation among variables.

4. RESEARCH FINDINGS

The questionnaire survey collects data in the form of close-ended questions with a five point “Likert scale”. Findings of such close-ended questions are analysed and discussed with the aid of Relative Important Index (RII) calculations.

4.1 SIGNIFICANCE OF COMMERCIAL MANAGEMENT FOR PROJECT SUCCESS

The questionnaire survey also explored the pivotal role of commercial management in the success of a construction project concerning a rating scale of 1 to 5. Accordingly, the survey results establish a RII of 0.946, firmly supporting the concept that commercial management is not only a contributing element but a significant determinant for project success. The distributions of the results and the agreement of the opinions among the respondents are further illustrated in the box plot shown in Figure 1.

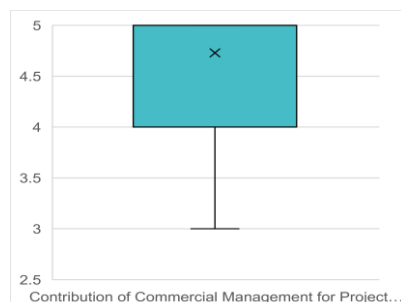


Figure 1: Contribution of commercial management for project success

The box plot in Figure 1 shows that the interquartile range of the distribution is tightly clustered towards the upper end of the scale between 4 and 5. This range is shown by the box part of the figure, which represents the middle 50% of ratings. Additionally, the cross symbol enclosed in the box signifies that the distribution has a mean value of 4.72. Hence, it is evident that commercial management is vital for the success of a construction project. Furthermore, several project parameters are dependent on the success of commercial management. Table 4 illustrates the effects of effective commercial management on anticipated profit levels, cost performance, completion dates, and quality assurance, using the scale percentage of respondent's opinions and the RII value as indicators.

Table 4: Analysis of effective commercial management

Project Parameters	Scale Percentage (%)					RII	Rank
	1	2	3	4	5		
Anticipated profit levels	0.03	0.01	0.13	0.51	0.31	0.81	2
Cost performance	0.03	0.00	0.10	0.46	0.41	0.85	1
Completion date	0.03	0.03	0.27	0.40	0.27	0.77	3
Quality assurance	0.04	0.10	0.24	0.43	0.19	0.72	4

According to Table 4, cost performance and anticipated profit levels are ranked first and second, respectively, with RII values over 0.80. Hence, the success of commercial management has a predominant impact on these parameters. Additionally, commercial management significantly impacts the completion date, with an RII of 0.77. On the other hand, quality assurance has the lowest RII of 0.72, indicating that commercial management still has a considerable influence on this parameter. Thus, the table concludes the importance of commercial management for project success and the success of project parameters.

4.2 CHALLENGES TO THE SUCCESS OF COMMERCIAL MANAGEMENT IN CONSTRUCTION PROJECTS

Even though commercial management plays a significant role in project success, many projects fail commercially resulting in loss in anticipated profits and cost performances.

The questionnaire survey identifies reasons for such failures as described in Figure 2 along with their RII values and respondents' opinions.

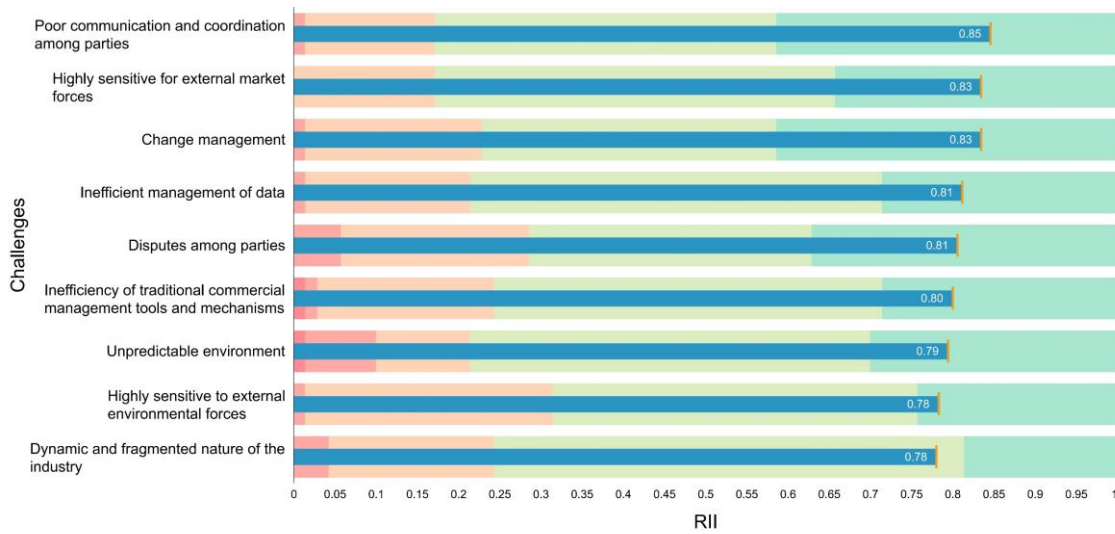


Figure 2: Challenges for the commercial management of construction projects

According to the questionnaire survey, “Poor communication and coordination among parties” stands out as the most cited challenge with an RII of 0.85. This highlights the critical need for effective communication channels and collaborative practices in commercial management. Further “Change management” and “High sensitivity for external market forces” are the second most significant obstacles with RII of 0.83. This reflects the inherently challenging nature of the construction industry due to the turbulent nature of the industry and changes in the project scope. In addition, commercial management faces issues due to “Dispute among parties” and “Inefficient management of data” with a RII of 0.811. Thus, it implies the need for effective dispute resolution methods and dispute avoidance practices for the construction industry. Further, the requirement for a better data management system for establishing a data driven decision making system. Moreover, “Inefficiency of traditional commercial management tools and mechanisms”, “Unpredictable environment”, “Dynamic and fragmented nature of the industry” and “Highly sensitivity for environmental forces” are also identified as considerable challenges with a RII greater than 0.77. Hence, the questionnaire survey confirms that the issues highlighted in the literature research are present in real-world applications. This is evidenced by all the challenges having a RII greater than 0.70, which indicates that these aspects are significant. Moreover, respondents were asked to identify further challenges in the commercial management of construction projects via an open-ended question. Accordingly, the responses were sorted, and five major challenges were identified as explained in Table 5.

Table 5: Identified other challenges

Challenge	Survey insights
Deficiencies in skill and personnel incompetence	The respondents highlighted that there are significant deficiencies in both technical and soft skills among industry professionals, including inadequate communication abilities and a shortage of competent personnel.
Less adoption of technology	There is a reluctance or a delay in embracing new technologies, along with a greater dependence on obsolete tools such as Excel.

Challenge	Survey insights
Inefficiencies in systems and processes	Survey responses also indicate that due to inefficient systems and processes, it has been unable to effectively maintain cash flow, control costs, and handle material procurement, resulting in cost overruns and project delays.
Influence from external forces	Respondents emphasised that commercial management has been constantly influenced by external forces such as supply chain disruptions, regulatory compliance, and market condition fluctuations.
Malfunctions in management	Respondents identify that middle management lacks comprehension and execution of efficient commercial management practices, which is further exacerbated by a general absence of managerial expertise. A respondent further explained “There is no proper communication between post and pre-contract team particularly when bidding for a project. As a result, the pre-contract team is unaware of the commercial management concerns experienced by the operational team. Further, they are using the old data without updating the cost database based on hands-on experience”.

As indicated by Table 5, the construction industry is currently facing significant commercial management challenges. These challenges are intricately interconnected and collectively diminish the effectiveness of commercial management practices. To address these challenges, it is essential to take a comprehensive approach that includes investing in skills development, adopting technological advancements, improving management processes, and promoting a culture of effective communication and leadership. These reforms are crucial for improving operational efficiency and achieving project success. They are also necessary to ensure that industry can adapt and remain resilient in a rapidly changing economic and regulatory environment. This analysis not only enhances understanding of the existing problems but also urges stakeholders in the industry to work together and make significant improvements.

4.3 DEGREE OF DIFFICULTY IN COMMERCIAL MANAGEMENT DISCIPLINES IN CONSTRUCTION PROJECTS

Commercial management is composed of a numerous discipline, each with its own distinct set of issues as identified by the questionnaire survey. Figure 3 presents commercial management functions as identified in the literature review and their level of difficulty in managing them with the aid of RII and the opinions of the respondents.

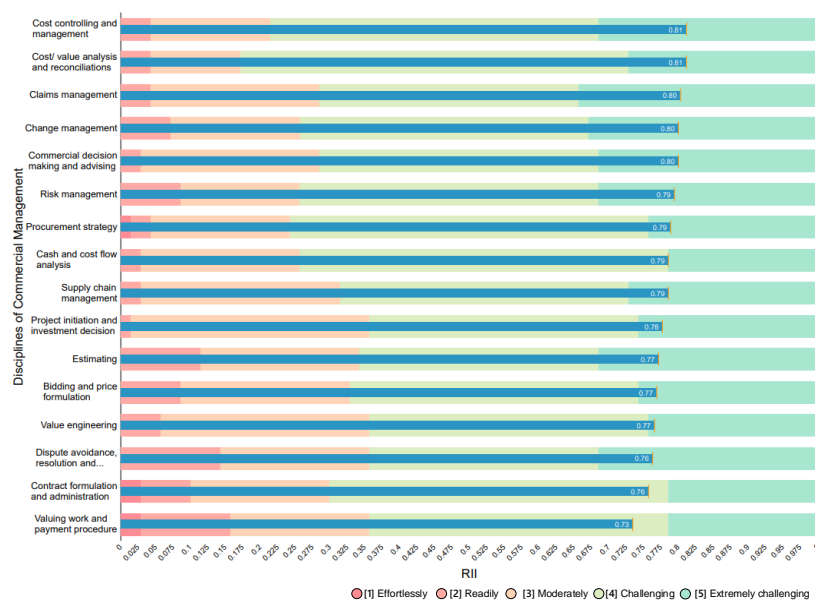


Figure 3: Degree of difficulty in commercial management disciplines

According to Figure 3, “Cost control and management” and “Cost value analysis and reconciliation” have the highest RII of 0.81, showing their challenging and complex nature. Further, “Claims management”, “Change management”, and “Commercial decision making and advising” are ranked at 3 with a RII of 0.80. Hence, the five most challenging functions process a RII greater than 0.80 highlighting the critical nature of them. Even though “Contract administration” ranked at last, it also has a RII of 0.76 concluding the importance and the degree of difficulty of all the disciplines in the commercial management of construction projects.

As the final question of the questionnaire survey, respondents were asked to propose novel approaches for effective commercial management via an open-ended question. Accordingly, respondents have highlighted four distinct approaches to integrating with commercial management. The majority of the participants recommended integrating digital technologies like BIM and AI into commercial management practices to enhance accuracy in planning and executing commercial management functions. However, a respondent also noted that there are still obstacles to its implementation, especially in regions like Sri Lanka. Furthermore, survey participants suggest utilising lean and agile methodologies for minimising inefficiency and enhancing flexibility to align with the operational procedures that are ever-changing in construction projects. In addition, the respondents also recognised blockchain technology and advanced data analytics for their potential to enhance transparency and facilitate more informed decision-making by utilising real-time data. Finally, respondents emphasised the need to focus more on sustainability and collaborative agreements, improving cooperation among stakeholders. The combination of these approaches demonstrates a comprehensive shift towards more cohesive, effective, and open commercial management in the construction sector, as indicated by the survey participants.

5. DISCUSSION

The challenge of the inefficiency of traditional commercial management tools with an RII greater than 0.77 aligns with Navon (2005) and Cheung et al. (2004), who critique existing performance measurement tools for their narrow focus on financial metrics. Inefficient management of data was noted as a significant issue, with an RII of 0.811. This finding is echoed by Martínez-Rojas et al. (2015) and Tanga et al. (2022), who stress the importance of effective data management in preventing project failures and disputes. The research identified poor communication and coordination among parties as the most cited challenge, with an RII of 0.85. This finding is consistent with the literature, where Chapman (2016) and Nasrun et al. (2014) emphasise that the fragmented nature of construction projects often leads to significant communication issues. Khan et al. (2016) further support this by noting that poor communication exacerbates disputes and delays, affecting overall project performance. This alignment suggests that addressing communication breakdowns through enhanced collaborative practices and communication channels is crucial for improving commercial management.

Further, change management was identified as a significant obstacle with an RII of 0.83, reflecting its critical impact on project costs and timelines. Literature by Rahman et al. (2022) and Chen et al. (2015) highlight that changes in project scope or design are inevitable and can lead to substantial commercial concerns, including increased costs and delays. Effective change management practices, therefore, are essential for mitigating these impacts and ensuring smoother project execution. Both the study and the literature

underscore the importance of addressing communication and coordination issues, managing changes effectively, adapting to external market forces, improving data management, and using efficient tools and methods. The alignment between the research findings and the literature validates the study's conclusions and recommendations.



Figure 4: Word cloud for challenges for commercial management in construction projects

Further insight into the challenges of commercial management in the construction industry is provided through Figure 4 have highlighted “Disruptions” as a significant challenge in commercial management in construction as illustrated.

6. CONCLUSIONS

The study underscores the significance of commercial management within the construction sector and underscores the challenges to its successful implementations. Challenges identified in the study highlight issues such as poor communication, change management, sensitivity to external market forces etc. These challenges highlight the importance of having effective communication strategies, change management and adaptation to external influences. Furthermore, the study reveals other obstacles such as conflict between parties and poor data management, highlighting the complexity of real-world marketing strategy issues. To improve project performance and operational efficiency, the study emphasises how important it is to address these issues. Furthermore, the innovative approaches suggested by the respondents such as utilising digital technologies, implementing lean and agile methodologies, and giving priority to collaborative agreements and sustainability indicate a general movement in the direction of more integrated and successful commercial management practices in the construction.

This paper unveils the specific challenges faced by commercial management in the construction industry in Sri Lanka, providing industry stakeholders with a comprehensive understanding of the factors that hinder effective commercial management practices. By highlighting these challenges, the research offers valuable insights to industry practitioners, enabling them to make informed decisions regarding commercial management strategies and practices. Understanding these challenges allows stakeholders to develop targeted solutions to address issues and improve project performance. Moreover, the paper contributes to theoretical frameworks and existing literature by providing evidence-based support for the identified challenges, enriching theoretical discourse and enhancing the understanding of commercial management dynamics in the construction sector. Additionally, by focusing on the Sri Lankan context, the paper

expands the body of knowledge on how cultural, regulatory, and economic factors influence commercial management practices, facilitating cross-contextual comparisons and strengthening theoretical foundations.

Research has significantly enhanced our understanding of commercial management functions in construction projects and their crucial role in ensuring project success. It has identified current issues within commercial management, offering a foundation for practical improvements. The findings of this study guide industry practitioners to adopt effective management approaches with the following recommendations: employ the research findings to delineate the necessary commercial management functions for each phase of construction, which will facilitate effective organisation and management of commercial aspects while enhancing project value; and use the research findings as a guideline to identify the most suitable lean tools for optimising commercial management processes. However, it is important to note that the study's focus was limited to the current state of commercial management practices.

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