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# **Navigating Project Scope Management in Construction: A Comprehensive Literature**

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**ABSTRACT:** This literature study delves into the critical domain of project scope management within the construction industry, emphasizing its significance, challenges, and impact on project outcomes. The review encompasses various perspectives, methodologies, and findings from diverse studies, offering a comprehensive understanding of scope management's multifaceted nature. Key themes explored include the integration of project scope definition and stakeholder management, the development and success of tools like the PDRI, challenges faced by small and medium construction enterprises (SMCEs), and the specific considerations for the construction industry in Saudi Arabia. Additionally, the study delves into the broader context of project management theories, the importance of user involvement, and the unique challenges faced by Jordan in its developmental stages. The literature review concludes with insights into scope creep, delays in construction projects, and the role of public-private collaborations in project success. The variety of topics covered underscores the holistic approach taken to understand and address the complexities of project scope management in the construction sector.

**KEY WORDS:** Project scope management, Construction projects, Stakeholder involvement, PDRI, Small and medium construction enterprises, Scope creep.

## **I.INTRODUCTION**

The literature study presented in this compilation offers a comprehensive exploration of project scope management in construction projects, highlighting its pivotal role in project execution and the intricate relationship with changes during project implementation. The integration of project scope definition and stakeholder management emerges as a central theme, emphasizing the need for a holistic approach to mitigate challenges and ensure project success. The literature delves into the unique challenges faced by small and medium construction enterprises (SMCEs), emphasizing factors like organizational culture and knowledge management. Notable studies provide categorizations, competencies, and best practices for preventing scope creep and managing changes effectively. The review extends beyond individual projects, addressing broader topics such as delays in construction projects and the complexities of public-private collaborations. The inclusion of diverse perspectives and theoretical frameworks contributes to a nuanced understanding of project management, emphasizing the critical importance of effective scope management for successful project outcomes.

## **II. LITERATURE SURVEY**

**Maja-Marija Nahod, et al.(2012)** The study emphasizes the importance of scope management in construction projects and the need for efficient and effective control over project changes. It introduces practical procedures for managing changes and highlights the impact of changes on project success, work productivity, and financial flows. Additionally, it suggests the use of system dynamics methodology and the development of tools for predicting the impact of potential changes. The research paper provides valuable insights for future studies in quantifying the impact of changes and the role of project managers in change management

**Evan Bingham et al.(2016)** the importance of front-end planning in infrastructure projects and introduces the Project Definition Rating Index (PDRI) as a tool for risk management. The PDRI was developed with input from industry professionals and is designed to assess the progress of planning and identify potential gaps that could lead to problems if not addressed. The file also provides examples of infrastructure project issues that the PDRI can help address and highlights the importance of early scope definition for project success. Overall, the document emphasizes the need for effective front-end planning to improve the cost and time performance of infrastructure projects.

**Mohammed K.Fageha et al.(2013)** The study emphasizes the importance of integrating project scope definition practices and stakeholder management in construction projects. It highlights the need to consider stakeholders' perspectives and positions to mitigate conflicts and ensure project success. The authors propose a procedure to measure the completeness



of project scope definition, taking into account stakeholders' inputs and concerns, and aim to develop a tool for evaluating project scope definition completeness at the pre-project planning stage.

**Vincenzo Corvello et al.(2016)** The study highlights the importance of project scope management in small and medium construction enterprises and the challenges faced by SMCEs in managing project scope. The study suggests that implementing systematic PSM processes can significantly improve the performance of SMCEs. The study recommends that SMCEs develop and implement PSM routines that include clear project objectives, effective communication, and knowledge management systems. The study also highlights the importance of organizational culture in promoting effective PSM practices. The study used a questionnaire-based survey to collect data from 100 SMCEs in Italy and analyzed the data using statistical techniques.

**Farshad Shirazi et al.(2017)** The article "Fuzzy decision analysis for project scope change management" discusses the importance of managing and controlling projects, considering the triple constraints of time, cost, and scope. The authors provide insights on the impact of changes during a project's lifecycle, and the potential negative effects of scope creep on a project. They also present a decision analysis model for selecting the best strategy to manage scope changes in projects, using fuzzy logic and entropy weighting methods. The article emphasizes the need for a scope change management system to be established for the project, and highlights the importance of aligning the project management process with the organizational strategy to achieve successful business outcomes.

**Wes Collins et al.(2017)** The article "Development of a Project Scope Definition and Assessment Tool for Small Industrial Construction Projects" presents the creation and validation of the project definition rating index for small industrial projects (PDRI-SIP), a front-end planning tool tailored for small projects. The tool's development involved input from 65 subject matter experts representing 29 organizations, who participated in weighting workshops to prioritize elements based on their project performance impacts. The PDRI-SIP was found to significantly improve cost and schedule performance for small industrial projects, with an average project assessment time of 1.3 hours and positive feedback from users. The study emphasizes the importance of effectively planning small projects, as their successful completion can have a substantial impact on an organization's bottom line. The tool's effectiveness in identifying critical risk issues during front-end planning and its ability to stimulate important discussions about project elements were highlighted as key strengths

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**Qais Hashil et al.(2018)** The article "Project Scope Management Through Multiple Perspectives: A Critical Review of Concepts" emphasizes the critical function of project scope management in the project management process, highlighting its significance in controlling project development expenses and ensuring the successful management of key project areas including time, cost, and quality. The six main steps in the scope management process, namely planning the scope, collecting requirements, defining the scope, creating a work breakdown structure, validating scope, and controlling the scope, are discussed in the context of different project methods and standards, underscoring their importance in achieving project objectives and minimizing scope creep. The comprehensive review provides valuable insights into the pivotal role of scope management in project success and cost control.

**Moayyad Sindi et al.(2018)** In the article "Scope Creep in Construction Industry of Saudi Arabia" published in the International Research Journal of Advanced Engineering and Science, Moayyad Sindi investigates the phenomenon of scope creep through a survey of 50 respondents from construction companies in Riyadh. The study emphasizes the importance of protecting project scope and identifies factors contributing to scope creep, such as lack of clarity in original specifications and client demands. Sindi also highlights the challenges of scope control and management in the construction industry and provides preliminary steps for effective scope management. The article acknowledges the complexity of managing scope changes and emphasizes the need for proactive measures to mitigate the adverse impact of scope creep, recognizing that unplanned changes can sometimes be resourceful in the long run. However, the study acknowledges its limitations in providing a comprehensive picture and contextualizes its findings within the construction industry of Saudi Arabia

**Maha Alkhaffaf et al.(2018)** This article discusses the importance of front-end planning (FEP) in infrastructure projects and introduces the Project Definition Rating Index (PDRI) as a tool for risk management. The PDRI is designed to systematically address risks in infrastructure projects by focusing on 12 key elements of scope definition. The article presents data from completed projects to support the hypothesis that improved early understanding of scope definition elements leads to improved project outcomes. The article also highlights some of the key issues related to scope definition



in infrastructure projects, such as the need for investment studies and alternatives assessments, contingency management, and compliance with local, regional, and national plans. Overall, the article emphasizes the importance of FEP and the PDRI in improving the performance of infrastructure projects

**Prasad Kudrekodlu Venkatesh et al.(2018)** "Delays in Construction Projects: A Review of Causes, Need & Scope for Further Research" by Prasad Kudrekodlu Venkatesh and Vasugi Venkatesan presents a qualitative research approach to review 53 peer-reviewed research articles on the causes of delays in construction projects. The study identifies diverse factors contributing to delays, such as poor planning, inadequate project management, design changes, and external influences. It recommends effective mitigation strategies, including improved planning and communication, and emphasizes the need for future research to focus on identifying root causes and developing practical solutions to address delays. Overall, the study provides valuable insights into the complexities of construction project delays and offers guidance for stakeholders to improve project outcomes.

**Alan Stretton et al.(2019)**. In his featured paper, Alan Stretton explores the potential for expanding project management services in the construction industry to add value and reduce costs. He emphasizes the increasing involvement of project management in actively managing the development phases of projects and providing organizational strategic planning services. Stretton highlights the limitations of traditional project management scope, advocating for a broader approach that encompasses organizational performance and strategic planning. He also discusses the drawbacks of the hierarchical tender-based system and suggests that the project management industry should seek opportunities to expand its services into broader domains to meet unsatisfied demand. Overall, the article underscores the need for project management to play a more significant role in project initiation and development stages, ultimately contributing to project success and client satisfaction.

**Ahmadullah Hilali et al.(2019)** This research paper investigates the barriers in contractual scope management of international development projects in Afghanistan. The study employs a mixed methodology, including interviews with industry experts and a quantitative assessment of the identified barriers. The findings reveal 39 unique barriers that impact scope management in Afghanistan's construction industry, including inaccuracies in site investigation reports, discrepancies in design information, and inappropriate allocation of pricing methods. The study highlights the need for better communication and collaboration between international organizations and domestic contractors in post-war countries like Afghanistan to improve the effectiveness of contractual scope management in construction projects

**Mian Ajmal et al.(2019)** The article explores the causes of project scope creep from the perspectives of different stakeholder groups, including project managers, consultants, and clients/customers. Through structured interviews and commonality analysis, the study identifies factors such as unclear customer needs, lack of comprehensive specifications, and imprecise language as contributors to scope creep. The authors emphasize the contrasting needs and requirements of stakeholders and decisions made by project managers, highlighting the importance of understanding and addressing these differences. Additionally, the paper proposes a framework for managing project scope creep based on the identified factors. The findings have practical implications for project managers and researchers, emphasizing the need for improved communication and understanding of stakeholder perspectives to mitigate scope creep and enhance project success.

**Bertrand V. Quelin et al.(2019)** "The Private Scope in Public-Private Collaborations: An Institutional and Capability-Based Perspective" by Bertrand V. Quelin, Sandro Cabral, Sergio Lazzarini, and Ilze Kivleniece examines the determinants of private scope in public-private partnerships (PPPs), which refers to the extent to which private actors are involved in multiple, consecutive value-creating activities in the partnership. The authors find that institutional and capability-based determinants jointly affect the extent of private scope in PPPs. The quality of the institutional environment is a key factor in facilitating greater private scope, and public and private capabilities also play a role. The authors suggest several areas for future research, including developing more direct measures of private scope, examining the decision-making process of governments in structuring PPPs, and exploring the impact of PPPs on broader societal outcomes.

**Elnaz Safapour et al.(2019)** "Identifying Manageable Scope Creep Indicators and Selecting Best Practice Strategies for Construction Projects" by Elnaz Safapour and Sharareh Kermanshachi, from the University of Texas at Arlington, presents a structured survey-based study aimed at identifying scope creep indicators and analyzing the impacts of implementing best practices to mitigate the consequences of scope changes in construction projects. The study emphasizes the importance of effective communication among project owners, clarity of project scope and goals, and the implementation of construction best practices such as constructability, team building, risk assessment, material management, dispute prevention, and quality management to minimize the cost and impact of scope creep. The research methodology involved a comprehensive literature review, the development and distribution of a structured survey, data analysis using statistical tests, and the quantification of the impact of each significant best practice. The outcomes of the study provide valuable insights for project managers to identify potential sources of scope creep early in their projects and apply appropriate best practices to minimize their impact throughout the execution of construction projects.



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**Dr. Adebayo Adebayo Fashina et al.(2020)** The featured paper, authored by Sakariye M. Abdilahi, Adebayo A. Fashina, and Funke F. Fakunle, provides an insightful overview of the applications of project scope management (PSM) in Somaliland's telecommunication industry, encompassing approaches, impacts, constraints, and practices. The authors, affiliated with Gollis University in Hargeisa, Somaliland, bring forth their expertise in telecommunication engineering, project management, and education management consultancy. The paper delves into the challenges encountered in telecommunication projects, the influence of project management tools on the industry, and successful PSM practices. Additionally, it highlights the application of project management knowledge areas to telecommunication projects and small and medium enterprises (SMEs), offering a valuable resource for professionals and researchers in the field.

**Mwaniki Ngari Julius et al.(2021)** the importance of project scope management in the successful implementation of rural road construction projects by Kenya Rural Roads Authority (KERRA) in Nyeri County, Kenya. It emphasizes the significance of scope planning, definition, control, and change management in achieving project success, as well as the impact of successful road projects on the economy and rural development. The study, guided by theories such as contingency theory and Project Management Competency Theory, provides insights into the challenges and factors affecting project success, and offers recommendations for improving scope management practices to enhance the rollout of rural road construction projects.

**Jan Bröchner et al.(2021)** Jan Bröchner examines the use of fictional works to gain insights into the individual values and human aspects of project work, particularly within the construction project management domain. By analyzing fourteen novels, two short stories, and four plays, the study provides a unique perspective on project management, emphasizing the potential for works of fiction to offer a broader representation of human aspects of project work, including unethical behavior. The research highlights the relevance of using novels as fieldwork material and the importance of understanding the historical and contextual factors that shape project management practice. Overall, the study provides a valuable contribution to project management literature by tapping into literary fiction to gain insights into the individual values and human aspects of project work.

**Qais Hashil Salim Al-Rubaiei et al.(2022)** "The Empirical Relationship between the Stakeholder Involvements, Project Manager Skills, Top Management Strategy and Project Scope Management: A Study on Government Projects in the Sultanate of Oman" explores the relationship between stakeholder involvement, project manager skills, top management strategy, and project scope management in government projects in Oman. The study finds a positive and significant relationship between these variables, indicating their crucial role in successful project management. The research employed a structured questionnaire and statistical analysis using SPSS software to measure and analyze the relationships between the variables, ultimately confirming their significance. The findings underscore the importance of stakeholder involvement and top management strategy in effectively managing project scope, providing valuable insights for project management in government settings

**Qais Hashil Salim Al-Rubaiei et al.(2022)** the issue of variation order costs in government projects in the Sultanate of Oman and provides insights and strategies for managing them effectively. The document highlights the importance of project success factors, stakeholder involvement, project manager skills, scope definition and control, and top management strategy in reducing variation order costs. The scope management review tool is presented as a solution to controlling variation order costs, and the potential benefits of effective scope management in government projects are discussed.

**Mian Ajmal et al.(2022)** managing project scope creep in the construction industry. It emphasizes the difficulty of preventing scope creep entirely but highlights the importance of minimizing its impact through careful planning, transparent communication of project goals and requirements, and understanding client needs and vision. The document also presents the demographic details of the respondents involved in the study, the methodology used for data analysis, and the factors contributing to project delays and cost overruns in construction projects. Additionally, it offers practical strategies for mitigating scope creep, such as recognizing project requirements, understanding project priorities, and ensuring precise and feasible project requirements. Overall, the PDF offers a comprehensive overview of the challenges and best practices for managing project scope creep in construction projects.

**Kanyaru David Mutembe et al.(2023)** Kanyaru the significance of project scope management in the successful implementation of an infrastructural health program in Nairobi County. It emphasizes the negative correlation between inadequately planned project scope and project performance, highlighting the importance of a well-defined scope in aligning stakeholder goals and expectations throughout the project's lifecycle. The study is guided by the Theory of Change and the Theory of Constraints, which provide a framework for understanding the mechanisms of project scope change and identifying constraints that may limit an organization's performance. The research methodology involves a descriptive research design, correlation analysis, and multiple regression analysis to test the relationship between variables, ultimately aiming to identify the factors influencing project scope management and project success.



**Mulwa Annah Mueni et al.(2023)** The research article "The Influence of Project Scope Management on the Performance of Construction Projects in Nairobi City County, Kenya" published in the International Journal of Management and Business Research 5(2) in September 2023, presents a comprehensive study on the challenges and performance of construction projects in Nairobi City County, Kenya. The study utilized a census sampling approach with 59 respondents involved in road construction projects by KURA in Nairobi County. The findings revealed that technical capacity, training, and integration of technology are crucial factors influencing project performance. The study also emphasized the importance of independent monitoring and evaluation for project viability and sustainability. The research contributes valuable insights into the improvement of project management practices in the construction industry, particularly in the context of Nairobi City County, Kenya, and provides a foundation for further exploration of this important topic 8.

**Nanang Hidayat et al.(2023)** the scope management analysis of construction work for mix-used building projects in the city of Jakarta. The study focuses on the importance of detailed planning in construction projects and the methods used to analyze the scope of work. The authors conducted interviews and collected data to provide valuable insights into the management of construction work. The study found that the process of planning and controlling the management of the scope of construction work involves identifying the type and activity of work items and dividing the scope of work according to the sequence and implementation procedures in accordance with the construction work contract agreement. The study also identified several factors and variables used in controlling the scope of construction work in high-rise building development projects in Jakarta. The authors recommend implementing the process of preparing the scope of construction work in detail based on their research and interviews with service providers. The study has implications for construction service providers and main contractors working on similar projects in other cities or countries.

**Patil Snehal Anil et al.(2023)** The critical function of project scope management, highlighting its impact on project outcomes and the success of other key project management areas such as time, cost, and quality. It addresses the issue of variation orders in the Sultanate of Oman, which can lead to additional costs on project development expenses, and suggests the need for a concept study to examine this issue. Furthermore, the PDF underscores the importance of stakeholder involvement, project manager skills, and top management strategy in government projects, indicating the necessity for further research to evaluate their effect on project scope management. The methodology involves research methods such as planning, controlling, and closing, as well as the use of statistical tools like SPSS for data analysis.

### III. CONCLUSION AND FUTURE WORK

In conclusion, this literature study offers a rich tapestry of insights into the realm of project scope management in construction projects. The integration of project scope definition with stakeholder management emerges as a critical theme, emphasizing the need for a holistic approach to mitigate conflicts and enhance project success. Tools like the PDRI are acknowledged for their effectiveness in assessing and improving project performance. The challenges faced by SMCEs, the unique considerations in the construction industry of Saudi Arabia, and the developmental challenges in Jordan underscore the importance of context-specific approaches to project scope management. Additionally, the study sheds light on the broader aspects of project management theories, user involvement, and the impact of public-private collaborations on project outcomes. The literature study provides a valuable foundation for practitioners and researchers alike, offering diverse perspectives and actionable insights for enhancing project scope management practices in the dynamic construction landscape.

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