2022

Project Management Strategies for Success—The Case of Zambia

Ngoza Chilonga Munthali
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Ngoza Chilonga Munthali

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Ronald Black, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Kathleen Andrews, Committee Member, Doctor of Business Administration Faculty

Dr. Judith Blando, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2022

Abstract

Project Management Strategies for Success—The Case of Zambia

by

Ngoza Chilonga Munthali

MA, Development Economics, University of East Anglia, 2006

BA, Development Studies and Economics, University of Zambia, 1998

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

August 2022

Abstract

Construction project managers who fail to implement infrastructure projects successfully negatively impact organizational performance and profitability. Grounded in the contingency management conceptual framework, the purpose of this qualitative multiple case study was to explore strategies Zambian construction project managers use to avoid infrastructure project failure. The participants comprised five construction project managers in Lusaka, Zambia, who reduced infrastructure project failures. Data were collected from semistructured interviews and a review of organization project documents. The Marshal and Rossman seven-step process was used to analyze the data. The following themes emerged: effective project planning, execution, and closure; effective communication; and effective collaboration and coordination. A key recommendation for construction project managers is to develop communication plans based on the project context and environment. The implications for positive social change include the potential to positively impact economic growth, employment creation, and poverty reduction.

Project Management Strategies for Success—The Case of Zambia

by

Ngoza Chilonga Munthali

MA, Development Economics, University of East Anglia, 2006

BA, Development Studies and Economics, University of Zambia, 1998

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

August 2022

Dedication

This work is dedicated to my husband, Jack, who has been a constant source of support and encouragement during the challenges of managing school, work and life. I am truly thankful for having you in my life and for being a pillar of strength. This work is also dedicated to my parents, Regina and Julius Chilonga, who have always loved me unconditionally and whose good examples have taught me to work hard for the things that I aspire to achieve. To my children, Chipo, Towera, Elijah and Chileleko, this is to your patience when I could not spend enough time with you because I had assignments and deadlines to catch up on. To all my family and friends, guys I also dedicate this work to you. You encouraged me throughout the doctoral journey.

Acknowledgments

First and foremost, I thank God the almighty for the gift of life and all that He has done for me to get to this point. I am extremely grateful to my supervisor Dr. Ronald Brown for the invaluable advice, continuous support, and patience during my DBA study. His immense knowledge and plentiful experience encouraged me throughout the time in my academic research and daily life. I would also like to thank Dr. Judith Blando and Dr. Kathleen Andrews for their technical support in my study. I would also like to express my gratitude to my mother, my husband, my children, and my siblings. Without their tremendous understanding and encouragement over the past few years, it would be impossible for me to complete my study.

Finally, I would like to express my sincere gratitude to my employers the Government of the Republic of Zambia for the financial support rendered. My supervisors at the different work stations I served, I appreciate their support throughout my academic life.

Table of Contents

i

ii

List of Tables

Section 1: Foundation of the Study

The private and public sectors increasingly establish organizational activities as projects (Duffield & Whitty, 2015). For the private sector, projects result in the organization's profitability, directly or indirectly, by improving the organization's strategic competitiveness (Kopmann et al., 2017). The essence of projects in the public sector is to benefit the larger society by providing value for money and contributing to a desirable development outcome (Hussain et al., 2017). Regardless of the different objectives for undertaking projects between the private and public sectors, project managers must meet the projects' goals. Project managers largely determine the success or failure of projects (Bredillet et al., 2015).

Background of the Problem

In their pursuit of comparable levels of development, developing countries worldwide provide large-scale infrastructures such as road construction, the building of bridges and dams, and other projects (Rammelt, 2018; Sari & Rahman, 2021). In Zambia, the construction industry contributed 10.3% to the overall gross domestic product (GDP) in 2017 (Central Statistics Office, 2018). Globally, the construction industry has continued to grow steadily despite the decline in the global economy (Saeedi & Karim, 2022). However, construction project delays and failure continue to be the norm (Saeedi & Karim, 2022), with Aranyossy et al. (2018) positing that large and complex projects have a failure rate of 40% across public and private sectors. Researchers estimated that,

on average, as a percentage of the original contract value, the total cost of reworking a failed project in South Africa was 5.12% (Simpeh et.al., 2015). Project performance, measured in line with meeting project goals on time, cost, and acceptable quality, is a study area that has raised much interest over the years (de Carvalho et al., 2015).

Project-management tools and techniques have gained popularity as a distinct management concept in achieving project success and have evolved to curtail continued poor project performance (Alias et al., 2014). Formal project-management tools include goal setting and planning project rules, standards, and procedures for use by the project team. Despite the associated benefits of using prescribed project management tools and systems, some projects have failed to deliver the expected outcomes with high failure rates (Ramazani & Jergeas, 2015). As a consequence of the continued failure of projects, interest in understanding the limitations of traditional project-management tools and techniques in achieving project success continues to intensify (Joslin & Müller, 2015; Klein et al., 2015). Klein et al. (2015) contended that project managers tend toward creativity, spontaneity, and intuition in applying project-management theories to project activities because of the complexities of managing projects for success. Therefore, it is arguable that in addition to adapting and using traditional project management tools and techniques, project managers require other strategies to manage projects for success.

Problem Statement

Construction projects across public and private sectors continue to experience repeated failures despite advances in project management tools and processes (Ahiaga-Dagbui et al., 2017). In 2013, developing countries, including, Sub-Saharan African countries, spent approximately one trillion U.S. dollars on infrastructure projects in public and private sectors (Miyamoto & Chiofalo, 2015); according to Ahiaga-Dagbui et al. (2017), transport infrastructure projects such as roads, bridges, and rail reported 86% probability of failure to meet targeted costs. The general business problem is that some project managers fail to adopt the right strategies to limit high project failure rates leading to financial loss and lower profitability for construction companies. The specific business problem is that some Zambian construction project managers lack project-management strategies to avoid infrastructure-project failure.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies Zambian construction project managers use to avoid infrastructure project failure. The population for this study comprised project managers working in Lusaka, Zambia. Project managers were from five public and private construction companies in Zambia who had implemented successful strategies to avoid infrastructure-project failure. The results of this study contribute to social change by including the potential for economic growth and

improved quality of life for affected communities because of the enhanced, well-planned, and efficiently implemented infrastructure projects

Nature of the Study

The primary three research methods available to a researcher are qualitative, quantitative, and mixed (Baškarada & Koronios, 2018). Qualitative methodology was used in this study. Using the qualitative methodology enables a researcher to explore the contextual richness of how people cope in their real-world settings (Yin, 2017) and provides for an in-depth understanding of a phenomenon (Baškarada & Koronios, 2018). Quantitative studies are best suited for studies using statistical data with clearly identified variables and focused on examining relationships or differences among multiple variables (D. L. Morgan, 2015). Mixed-method research requires a level of statistical measure by incorporating techniques of qualitative and quantitative methodologies (Venkatesh, et al., 2016). This study used no statistical data measures, rendering the quantitative and mixed-method research methodologies unsuitable.

Qualitative research designs include case studies, ethnography, phenomenology, and narrative research (Yin, 2017). A case study design was used in this study. Case-study research enables a researcher to conduct a broad in-depth investigation of a phenomenon for which limited literature exists, arising from various sources consistent with exploratory research (Marshall & Rossman, 2016; Yin, 2017). An ethnographic design provides a systematic understanding of cultural context and its influence on the

behaviors of individuals or groups of individuals (Bernard, 2013). This study was not

focused on respondents' cultural context, rendering ethnographic design unsuitable. The

phenomenological method focuses on an in-depth investigation of participants' lived

experiences (Padilla-Díaz, 2015). The focus of this study was not to explore project

managers' lived experiences, making phenomenological design inappropriate. A narrative

design centers on the lives of the research participants as told through stories (Clandinin,

et al., 2016). This study did not focus on the lives of the participants or their stories;

hence, a narrative design was unfitting. I chose to use the case-study design for this

research to allow for a holistic and critical exploration of the project-management

strategies used by various project managers.

Research Question

The research question under exploration was as follows: How do Zambian

construction project managers avoid construction-project failure?

Interview Questions

I posed the following interview questions to participants:

1. What strategies do you use in managing projects to avoid project failure?

2. What method works best in determining the choice of the project-management
   strategies you use in managing successful projects?

3. What barriers have you encountered in implementing your project-
   management strategies to reduce project failure rates?

4. How did you address the barriers to implementing the strategies to reduce infrastructure-project failure rates?

5. How is the effectiveness of the strategies to reduce infrastructure-project failure rates assessed?

6. Is there anything else you would like to share regarding the project-management strategies you apply to avoid project failure?

Conceptual Framework

Contingency-management theory formed the basis of this study. Fiedler's (1967) contingency-trait theory was the precursor to contingency-management theory. The assertion behind the contingency management theory is that no single best method exists to manage individuals or projects. The following fundamental constructs underlie contingency-management theory: (a) no best way of managing exists, (b) the environment or situation determines the appropriate way to manage, (c) the selection of the appropriate strategic fit with the environment and its subsystems influences organizational performance, and (d) an appropriate management style determines the performance of the organization (G. Morgan, 2007). Hence, the circumstances, environment, and context determine the most appropriate management and leadership strategy and approach.

According to contingency-management theory, no one management approach or strategy fits all circumstances or situations (McAdam et al., 2016). Contingency-

management theorists have suggested that most successful projects are likely to be those whose project managers find the best fit between the strategies and the project context (Shenhar, 2015). Contingency-management theory may be useful in exploring successful prevention strategies because project managers are likely to use different project management strategies based on the contingencies surrounding projects to avoid project failure.

Operational Definitions

The definitions below provide the meaning associated with terms frequently used in this study.

Project management: This term refers to the application of knowledge, skills, tools, and techniques to project activities to meet the requirements of the project (Project Management Institute, 2017).

Project management tools: These are a set of processes or mechanics designed to help project individuals and teams to plan a project, track, and manage the tasks to achieve the defined project goals within the time and cost. Such tools also assist team members in collaborating effectively and accelerating the projects to meet the specified objectives while addressing the constraints (Varajão et al., 2020)

Project-management body of knowledge (PMBOK): PMBOK is the guide introduced by the Project Management Institute (PMI) to provide a universal standard for

use by project managers in conducting project management practices while managing

individual projects (Snyder Dionisio, 2017).

Traditional project management: Traditional project management is the use of

prescribed methods, tools, techniques, and knowledge on project activities to meet the

requirements of a project (Kostalova et al., 2017)

Assumptions, Limitations, and Delimitations

Assumptions

When justifying a study, researchers consider certain items to affect the

understanding and outcome of a study (Lips-Wiersma & Mills, 2014) with details that,

though unverified, are assumed true (Marshall & Rossman, 2016). I had two assumptions

in this study. The first was that the research participants would be truthful and accurate in

responding. The second assumption was that project managers interviewed would have

the authority to make decisions regarding strategies that can work to enhance their

performance; therefore, these participants were suitable to accomplish the desired study

objectives.

Limitations

Uncontrollable circumstances arise during research, resulting in weaknesses and

internal threats that can affect the transferability of research findings (Marshall &

Rossman, 2016). Limitations could influence the perceptions of future researchers

intending to use the research about the reliability of the findings of a study (Shipman,

2014). Possible limitations to qualitative research are sample type and sample sizes (Yilmaz, 2013). I identified two limitations associated with this study. First, the study results depend on the participants' responses with no project documents to validate their responses. Second, respondents were restricted to a small geographical area, thereby affecting the ability to transfer the findings.

Delimitations

Delimitations provide the bounds of the research (Hancock & Algozzine, 2016) and impact the ability to transfer the research findings. Delimitations also define what researchers will not do (Marshall & Rossman, 2016). This study was limited to project managers with a history of delivering successful public-sector projects. Because of time and financial constraints, all project managers participating in the study practiced in Lusaka, Zambia.

Significance of the Study

Contribution to Business Practice

The success or failure rates of projects affect an organization's profitability and performance (Rui et al., 2017). By identifying strategies that have worked in enhancing project success and reducing project failures, construction companies are likely to improve the levels of business performance. Therefore, the results of this study could provide information on the critical strategies associated with executing successful public-sector infrastructure projects. Project managers could apply the study findings to improve

project performance of future projects by avoiding identified problems leading to project failure and adopting identified strategies associated with project success (Jallow et al., 2014).

The information from this study will enable project managers to develop workable strategies and tactics to decrease the number and costs of potential project failures. With a clear understanding of multiple perspectives on project management, study findings may add to the knowledge project managers can use to enhance their abilities to avoid or reduce project failure. Project managers can institute strategies to monitor and control for project failure to improve project success.

Implications for Social Change

The contribution of infrastructure to economic growth and poverty reduction is not disputable (Zamojska & Próchniak, 2017). By using more effective strategies to improve project performance and increase profitability, the beneficence of infrastructure is likely to be enhanced. More social and economic infrastructure is likely to be provided effectively, benefiting communities, citizens, and families. Additionally, with higher project success rates in public projects comes an increased likelihood of increased economic growth and poverty reduction through reduced costs of providing public infrastructure and services with a concomitant increase in social amenities. With increased economic development comes more significant social change (Hussain et al., 2017).

A Review of the Professional and Academic Literature

This qualitative multiple case study explored strategies project managers use to avoid infrastructure-project failure. I undertook an extensive review of the extant literature on project management, factors that influence project success, contingency theory, and strategies used by project managers to manage projects. When seeking relevant literature, I focused on peer-reviewed studies and articles relevant to answering the research question. I searched the following databases: Google Scholar, Science Direct, Business Source Complete, ProQuest Central and ProQuest Dissertations and Theses Full Text, and ABI/INFORM Complete. I also searched for literature on PsycINFO, EBSCOhost, Sage PREMIER, Emerald Management Journals, Academic Search Complete, and dissertations and theses at Walden University. I used the following keywords and a combination of them as a strategy to develop the literature review: (a) contingency theories, (b) project management, (c) project success, (d) strategies, and (e) project managers.

When building this literature review, I primarily considered the conceptualization of project management and the alternatives to the management of projects. The investigation of literature focused on underscoring the professional and academic literature existing on varied experiences in managing projects for success. Additionally, the consideration of literature focused on the influence of the contingency-theory school of thought and the influence the theory has on the success of projects.

Table 1 provides detail on the number of publications and other references used in the literature review by the period of publication. I used a total of 115 sources in the literature review, of which 89% represent literature published within a 5-year period. The other 13 works were formative or seminal studies.

Table 1

Summary of the Literature Review References

Source type	2015–2019	% of 2015–2019	Older	% of older	Total
Academic, peer-reviewed journals	98	85.2	8	6.9	106
Books	4	3.4	5	4.5	9
Total	102	88.6	13	11.4	115

Application to the Applied Business Problem

Contingency Theory

Contingency theory takes various approaches focused either on the suitability of the fit or the processes of adapting to the context and environment to achieve a contextual fit (Shenhar & Holzmann, 2017). Consideration of the project context, complexity, novelty, and environment and contingency theory in project-management research is gaining popularity (Papke-Shields & Boyer-Wright, 2017). Previously, researchers' focus was on identifying critical-success factors for projects with the understanding that the causes of project success or failure were similar; therefore, identifying and managing these factors would result in project success. The contingency-theory approach broadens

this perception by extending factors to include project (and organizational) contexts and the environment. An example is Canonico and Söderlund (2010), who applied a contingency model of management control to multi-project organizations. Joslin and Müller (2016) considered the contingency approach by considering the management of projects based on differences in project environments.

Three or more individuals working to achieve a shared purpose form a team (Imangulova & Kolesnyk, 2016), and like any team in an organization, project teams do not operate in a vacuum but in the organization's context. Members with varying cultural norms form project teams; therefore, the interface and collaboration on a team impact the achievement of objectives. Given likely differences in team members' cultural norms, the management of project teams impacts the project's outcome (Imangulova & Kolesnyk, 2016). Thus, project managers should understand the different cultural norms of project team members to develop appropriate leadership strategies to achieve team cohesion (Franz et al., 2016). Contingency-theory approaches and perspectives indicate that the success of projects depends on contingency factors (Joslin & Müller, 2016); therefore, project-team managers should consider cultural norms as one contingency in a project setting.

The application of conventional project-management practices, even in organizational projects, does not guarantee success in investment (Badewi & Shehab, 2016). No universality exists in the management of projects, just as project-success

factors are not universal (van der Hoorn, 2016). Variations in projects underpin contingency-theory-based project management (van der Hoorn, 2016). Therefore, in practice, project managers behave in various ways in real-life situations by adopting workable management styles rather than managing projects using prescribed, traditional project-management approaches. Sydow and Braun (2018) contended that capturing only the formal ways of managing projects may not sufficiently explain what leads to project success, considering the informal interactions and connections associated with projects and project teams.

The contingency theory-based approach suggests that project performance is primarily a result of the fit among a set of contingencies that include the complexity of the project, the environment in which the project is operating, the project structure, the team culture, available technology, and organizational strategy (Tosi & Slocum, 1984). According to the contingency-theory approach, the success or failure of a project rests on its fit with several factors. The conceptual argument is that the consequence of one variable on another depends on some third cause, demonstrating that no one best way exists to manage (G. Morgan, 2007; Otley, 2016; Tosi & Slocum, 1984). Theorists of the contingency approach use the notion of fit to capture the association between the project environmental context and project characteristics (Joslin & Müller, 2016; van der Hoorn, 2016), assumed to contribute to better project performance outcomes.

The contingency theory-based approach implies that managers select and use a methodology to manage projects that they customize based on project contingencies in the project management field. Accordingly, the success of a given factor, such as project management, is not due to a straightforward answer but is moderated by other factors. The frequently cited project contingencies that impact the effectiveness of the project-management methodology adopted by project managers include governance and the environment in which projects operate (Joslin & Müller, 2015, 2016). Although no single best method exists to manage organizations and projects for success (G. Morgan, 2007), the organizational or project environment and context determine the best approach. Joslin and Müller (2016) posited, in adopting the project-management approach, that project managers need to consider the environment in which the project is operating and the governance structures of the project as factors influencing project success.

The success of any organization or project is due to the type of task, environment, or situation, the management approach adopted (G. Morgan, 2007), and the capacity to adjust or adapt to the context (McAdam et al., 2016). Harmony must exist between the organization, project structure, and environment (McAdam et al., 2016). The following significant constructs underlie contingency theory: (a) no best way of managing exists, (b) the environment or situation determines the appropriate way of managing, (c) the fit influences organizational performance with the environment and with its subsystems, and

(d) the appropriate management style determines the performance of the organization (G. Morgan, 2007).

Historically, broad generalizations by various researchers characterized the use of contingency theory (Otley, 2016). Contingency theory gained popularity in the 1950s and 1960s as an alternative option to the generalized models of organizational theory advocated by Woodward and other scholars (Hanisch & Wald, 2012). According to Woodward (1958), technologies directly accounted for the disparities between aspects of organizations such as control span, authority centralization, procedure, and rule formalization. Woodward supposed that various contingencies—suppliers and distributors, competitors, government, customers and consumer interest groups, unions, and technology—influenced the operations of organizations. Considering projects as temporal organizations, the influence of such similar factors and their management is essential for the success of projects and therefore relevant to the context of this study.

According to Sauser et al. (2009), users of the contingency-theory approach considered the prescribed scientific forms of management theory and lacked awareness and consideration of the organizational context and administrative behaviors, thereby leading to their failure in addressing underlying organizational problems. Therefore, Vidal et al. (2017) concluded that no single best way to behave and manage aligns with the organization and leadership. Instead, the context and adopted management practices determine the effectiveness of the leader (Hossain & Saleh, 2016). This viewpoint

underpins this study in understanding the strategies adopted by project managers in managing successful projects in Zambia.

Despite the broad and recognized research on contingency theories, the application of the theory to project-management research was low, emerging gradually and gaining greater prominence in the last 2 decades (McAdam et al., 2016). According to contingency theorists, the concept of fit captures the relationship between the characteristics of the organization—in this case, the project—and the context, assumed to contribute to better performance results (Hossain & Saleh, 2016; Vidal et al., 2017). Vidal et al. (2017) contended misfits are worse than any fits.

With the consideration of projects as temporary organizations (Sydow & Braun, 2018) and without an established overarching theoretical framework, contingency theory serves as a useful explanation for strategies used by project managers to achieve project success (Vidal et al., 2017). Emphasis is on context-based strategies and approaches that depend on contingency fit rather than on a single best way to manage projects. From this perspective, project managers seek to improve the performance of projects by improving the fit and aligning with the project environment (McAdam et al., 2016). Proponents of contingency theory argue against the existence of homogenous best practices to management. Contingency theories include a variety of approaches focusing on either the effectiveness of fit across a variety of firms or the adaptation of processes by which individual firms achieve fit with their task environments. The core concept of fit as a

foundational aspect of contingency theory is the basis for advocating the need for proper

alignment among internal and external organizational factors that positively affect project

performance.

Complexity Theory as an Alternative Theory

Introduced by Kauffman (1993), complexity theory explains the

interconnectedness among variables in a complex system. Complexity theory is a model

accounting for rich diversity among variables and the influence each variable brings to

the whole system (Baltacı & Balcı, 2017). Complexity theory provides an alternative

theory to explain complexities in projects and the variously interconnected subsystems

related to the interorganizational nature of projects. Accordingly, complex systems are

not the same as complicated systems and projects are complex systems and not

necessarily complicated (Arena & Uhl-Bien, 2016).

Kauffman (1993) recognized five properties of complex systems: (a) nonlinear

relationships, (b) unbounded, (c) multiple causality, (d) self-organization tendencies,

among the different system agendas, and (e) emergent designs. These properties indicate

that complex systems tend to have unpredictable dynamic relationships with several

sources of change in the system and unclear demarcations. Additionally, the proposition

by Kauffman entailed that systems can change relationships, reveal new information, and

have dynamic interactions. Because of the dynamics associated with complex systems,

the interaction among variables in a complex system tends to achieve results fundamentally different from those anticipated (Baltacı & Balcı, 2017).

Applied to the management of projects, some properties of complexity theory are applicable to project management, such as nonlinearity and multicausality (Kauffman, 1993). However, a lack of clarity led to some complications, with some researchers debating the composition and definition of complexity in the context of the project (Padalkar & Gopinath, 2016). Other properties associated with complexity theory render it somewhat less applicable to project-management practice such as unboundedness, considering that projects are definitive, temporary, and bounded in nature (Padalkar & Gopinath, 2016). The argument that complex systems are self-organizing entails that project managers have no role in organizing projects; as a self-organizing agent, projects would have no need for management oversight. Project leadership is critical for project success (Hermano & Martín-Cruz, 2016). This weakness in complexity theory rendered the theory inappropriate to use as the conceptual framework for this research.

Projects as Temporary Organizations

Projects can be perceived as temporary organizations; therefore, their management can borrow from organizational theory (Sydow & Braun, 2018). Temporary organization align with activities and practices based on mutually dependent individuals organized in the form of teams and company actors pursuing agreed-upon ex ante objectives in a fixed time frame (Burke & Morley, 2016). This definition of temporary

organizations is similar to the PMBOK Guide definition of projects as temporary

undertakings aimed at achieving set objectives in a stipulated period of time (PMI, 2017).

This notion supports the principle of projects as temporary organizations.

Lundin and Söderholm in 1995 were the first to conceptualize the idea of

considering projects as temporary organizations; in 2003, Tuner and Müller integrated the

traditional project-management view using projects as temporal organizations (as cited in

Sydow & Braun, 2018). These developments led to new perspectives on the management

of projects from a narrow perspective to an approach that is more pluralistic in nature,

borrowing from the organizational theories of management (Lundin et al., 2015).

Temporary organizations like projects are time bound and the management of time is of

great significance (Sydow & Braun, 2018).

The differentiating factor of temporary organizations that makes them similar in

management to projects is the ex-ante mechanism of termination, built in the structures.

In managing temporary organizations like projects, managers rely on groups of

individuals rather than organizational units (Sydow & Braun, 2018). These groups of

individuals often come together from various backgrounds, experiences, and expectations

regarding organizational or project objectives, leading to heuristic rather than systematic

information processing (Sydow & Braun, 2018) influenced by the interorganizational

past relations of the team (Eriksson et al., 2016).

Another significant similarity between temporary organizations and projects is the management of interorganizational relations with various stakeholders; temporary organizations and projects cross organizational boundaries (Sydow & Braun, 2018). Given the understanding of projects as temporary organizations, projects do not need to be managed using the traditional project-management approach with conventional project-management methodologies, tools, and techniques (Jacobsson et al., 2016). Projects, like temporary organizations, require management with consideration of their temporary and relational nature. It is with this understanding that contingency theory approaches to project management are considered an alternative to traditional project management.

Projects as Interorganizations

Projects are increasingly becoming interorganizational in nature, and this provides another challenge in the context and complexity of managing projects (Sydow & Braun, 2018). The complexity associated with the interorganizational nature of projects relates to latent and activated ties in these projects, assorted team members with varying cultural backgrounds, and the associated hierarchies created that require disordering by the project manager (Takele & Teklu, 2016). The interorganizational nature of projects entails the project manager facing the challenge of blurring organizational boundaries and the need to reframe the behavior of individual project teams that are influenced by their organizations or departments (Sydow & Braun, 2018).

Although not all projects are interorganizational in nature, construction projects are embedded in interorganizational settings (Sha, 2016), involving more than one organization—an increasingly important consideration in developing strategies for managing projects. In the case of construction projects, apart from the organization implementing the project, as an example, the organizations supplying the materials greatly influence the performance of the project. Typically, a construction project involves interplay among various organizations and systems including the project sponsor, the contracted organization, subcontractors that in some cases may be several, the consultant, and the designer (Wu et al., 2018). Each of these influences the success of the project in some way. Therefore, project success is not limited to the confines of the project or the implementing organization (Sydow & Braun, 2018). Thus, project managers need to recognize the other influencing factors in deciding on the project-management strategies to apply.

Apart from external factors that influence project performance, behaviors of project team members and past and future interactions of team members influence project performance through the shadows of interorganizational relationships (Ligthart et al., 2016). Past relationships of project members are either a source of innovation in the project setting (Eriksson et al., 2016) or a source of fragmentation that requires effective management to yield positive project performance. The interorganizational nature of the project is, therefore, not only of innovation but also of inertia (Sydow & Braun, 2018).

When considering the projects as interorganizational, the role of a project manager is two-fold: that of a chief executive with autonomy and power and that of the agent to the principals (Sydow & Braun, 2018). As chief executive of the project, the project manager achieves the success of the project by providing leadership. As project leaders, project managers stimulate, motivate, and recognize project members to get work done and achieve the desired outcome (Andersen, 2016). The goal is to inspire team members to exert their full potential and remain committed to the achievement of the desired results. In achieving their role as chief executive officer, project managers may adopt different leadership styles and strategies, based on the situation (Cho et al., 2016).

Another important aspect of the project manager's role as chief executive officer of the project is to manage relationships among and with different stakeholders. The management of projects includes addressing customers, service providers, suppliers, and other stakeholders, providing an important context of the interorganizational nature of projects (Ligthart et al., 2016; Sydow & Braun, 2018). As a result, the management of a project cannot depend only on the traditional classic project-management approaches; the manager may have to establish strategies to strengthen reciprocal trust and cooperation among the various project actors (Ligthart et al., 2016). In developing strategies to manage projects, Müller et al. (2016) asserted that informal connections matter as much as formal contracts. Traditional project-management approaches may overlook the need to manage informal connections (van der Hoorn & Whitty, 2015).

Project Success and Failure

In the project management field, and in the consciousness of project managers, the notion of project success continues to be highly ambiguous with no clearly accepted definition (Samset & Volden, 2016). Various institutions and individuals interpret project success differently (Davis, 2014; Samset & Volden, 2016). The term success remains a highly subjective and vague concept, depending on individual perspectives (Davis, 2014; de Carvalho et al., 2015; Rolstadås et al., 2014). Different project types are measured differently and in certain cases, the same project is assessed differently by different individuals based on preferences, the degree to which the project affects them, and individual values. A project manager measures success by how close the project comes to being on time, on budget, and aligned with specifications; in contrast, for the investor, success is about long-term economic feasibility; and for the user, success is the effects of the project.

Traditionally, conformity with project cost, schedule, and performance, referenced as an *iron triangle,* constitutes project success (Brady & Davies, 2014; Cserháti & Szabó, 2014). Increasingly, the notion of viewing project success using the "*iron triangle*" is changing on the basis that the iron triangle was an insufficient measure of success (Anantatmula, 2015; Mir & Pinnington, 2014; Serrador & Turner, 2014). Rather, a need exists for an enhanced understanding of success.

Using the iron triangle as a measure focuses on project efficiency rather than project success (Berssaneti & Carvalho, 2015). As a result, definitions of project success have changed to include multiple criteria because of the complexity of projects and the involvement of various parties, including stakeholder satisfaction as a success measure (Davis, 2014; Ramos & Mota, 2016; Serrador & Turner, 2014). New measures of project success should consider the expectations and perspectives of the various stakeholders and end-users. End-user satisfaction, supplier satisfaction, team satisfaction, customer satisfaction, meeting user requirements, attaining the purpose, and business success are all perspectives requiring consideration when measuring and defining the success of projects (Davis, 2014).

de Carvalho et al. (2015) argued that, in addition to financial performance and the iron triangle definition of project success, a need exists to distinguish between project-management success and the success of the project product or service provided. A true project success definition, consequently, must evaluate the different aspects of the project: the impact on the environment, social characteristics, and project, product or service sustainability.

Projects are increasingly becoming complex, compounded by the political, socioeconomic, and technological environments in which they exist and coexist (Berssaneti & Carvalho, 2015). Samset and Volden (2016) distinguished project success in terms of strategic and tactical performance. In strategic terms, performance includes

long-term and broader perspectives considering sustainability, relevance, and the impact of the project. Tactical performance is short-term in nature, considering the iron triangle. A successful project delivers the agreed output and, at the same time, contributes to the significant fulfillment of the overall objectives (Samset & Volden, 2016).

Although it is important to understand the reasons behind project failure, because of the varied definitions of project success, it becomes difficult to distinguish and define what constitutes project failure (Rezvani et al., 2016). Additionally, the challenge in defining project failure arises from the varied states of a project between complete success and complete failure (Müller & Jugdev, 2012). Considering the crucial role that understanding project success or failure has in project-related research, it is imperative to discuss the factors that influence project success.

Project Success Factors

Several factors significantly contribute to the success or failure of projects and the management of projects (Silva Susil et al., 2015). Silva Susil et al. (2015) identified 34 factors critical to project success. Amade et al. (2015) highlighted nine aspects as critical in containing project failure and abandoning public-sector construction projects. Managing these factors is essential to the success of projects in developing countries. The nine factors outlined by Amade et al. are as follows:

1. a lack of detailed and comprehensive design by the contractors,

2. inadequate effective monitoring,

3. unclear understanding of the project's mission,

4. insufficient technical know-how of the project manager,

5. insufficient support from top management,

6. political risks,

7. an ineffective procurement process,

8. insufficient financing by the client, and

9. ineffective communication and information-management strategies by the
   project team.

Berssaneti and Carvalho (2015) explored the influence of internal and external environments to enhance understanding of the causes of project failure; while, Joslin and Müller (2015) studied the influence of project context and conduct of actors in projects on project failure. When addressing the main influences on project success, a project manager manages the time required to complete the project, financial assets, and other resources (Pandya, 2014). Daily, project managers face obstacles and challenges that impact the completion of projects in the planned timeframe, planned costs, defined quality, and using the available resources (Chen et al., 2019). Project managers must develop workable strategies aimed at effectively managing the critical factors of scope time and resources while managing stakeholder and project team expectations.

One shared element between a failed project and a successful one is the management of the people (Nitschke, 2013). The project manager is at the center of the

project process and has a significant role in overseeing the project, directing the project team, and ensuring the success of the project (DuBois et al., 2015). It is the role of the project manager to ensure the project ends in success. Leadership and people management are critical to project management. Fundamental to the way people work together in teams to achieve defined objects is the performance of leadership and has been a subject of much research in project-management literature (Nixon et al., 2012). Leadership is an essential portion of project management, influencing project outcomes and project excellence directly, determining the overall project culture, and providing a tool to mobilize people for change (Ahmed et al., 2013). Leadership skills critical for project success include problem solving, motivation, negotiation, influence, conflict management, and effective communication (Ahmed et al., 2013). Leadership style and personality traits are critical project success factors (Ahmed & Anantatmula, 2017). Additionally, the ability for the project manager to use lessons learned from experience influences project success (Sepehri, 2015).

Project managers consider leadership to entail developing effective communication tools as the central factor to generate a positive relationship among leaders, the supporters of the project, and the project teams (Vacar, 2014). Teamwork is a critical element for the success of any project. However, the temporality of projects means that members of the project teams could be new, with no past working relationships, and may not spend enough time on the project to establish an effective way

of working together (Too & Weaver, 2014). It is critical, therefore, that the project

manager uses leadership to develop effective project teams to maximize the performance

of the project team (Vacar, 2014). Effective project teams are critical to project success.

Leadership styles that include team building, establishing clear relations and roles among

project members, openness, self-confidence, organization, clearly defining project

successes, and reevaluating when necessary influence project success (DuBois et al.,

2015). Leadership styles and traits likely influence the selection of strategies for use in

managing projects for success (DuBois et al., 2015).

Building trust among team members and empowering the project team are

elements of leadership that are critical to successful project management. It is critical that

project managers build synchronization, cooperation, and coordination among project

teams (Zoogah et al., 2015). Project managers assign great importance to human-resource

actions essential in achieving organizational objectives by creating a powerful and united

team and strengthening relationships among team members through good communication

(Vacar, 2014). Project managers' leadership skills significantly influence project success

(Pandya, 2014), as they are accountable for the day-to-day oversight of the project,

managing change, assuring the availability of resources, addressing behavioral and

emotional flares with internal and external stakeholders, and building relationships that

help create a high-performance team.

Various skill components influence project performance differently (Sunindijo, 2015). Interpersonal skills positively influence project-time performance whereas four skill components—emotional intelligence, interpersonal skill, apparent sincerity, and budgeting—positively influence project cost performance. In addition, eight skill components—visioning, emotional intelligence, interpersonal skill, transformational leadership, interpersonal influence, apparent sincerity, quality management, and document and contract administration—influence project-quality performance. Project managers must develop effective skills to manage the multifaceted responsibilities associated with managing successful projects (Sunindijo, 2015).

T. Williams (2015) focused on the interconnected nature of success considering causal chains through which success emerges. Among success factors are the multidimensionality of project success and the complex interactions among factors. Root causes of specific project success factors are generic or context-dependent, building on the underlying systemic nature of success factors (T. Williams, 2015).

Successful Project Management

For decades, the management of projects has focused on measuring performance based on the iron triangle, thereby directing the development of tools and frameworks to achieve efficiency (Hjelmbrekke et al., 2015). Project management is a key topic in the literature on projects (Ali & Kidd, 2013), rooted in foundational organizational, administrative, human relations, and scientific-management philosophies (T. C.

Williams, 2011). Representatives of the PMI (2017) defined project management as the use of techniques, tools, skills, knowledge, and capabilities on a project to meet or surpass stakeholder requirements and expectations. Kaiser et al. (2015) described project management as a framework for providing strategies, techniques, and methodologies to manage projects efficiently and successfully.

Several tools used in project management to estimate and manage costs emerged from defense programs for aircraft, missiles, shipbuilding, and facilities of the 1940s and 1950s (Lenfle & Loch, 2010). Following those tools, managers executed projects through planning, scheduling, cost estimating, cost control, and schedule-control functions, forming associations among them (Ghosh et al., 2012). The focus of these associations was to standardize the project manager's knowledge in consideration of the essential experience, interpersonal skills, and competence that are key for successful project management (Ballesteros-Sánchez et al., 2019). Furthermore, the focus of institutions such as PMI and the International Project Management Association was to develop standard tools and techniques to manage projects (Ghosh et al., 2012).

A white paper, *Guide to the Project Management Body of Knowledge (PMBOK),* was developed by PMI in 1981, eventually constituting an official guiding document in 1987 (Ghosh et al., 2012). Ultimately, the PMBOK progressed into defining standards for the project management profession (PMI, 2017). Despite the standards, techniques, or tools used, project managers manage, control, and minimize project-failure rates by

ensuring project alignment with project objectives (Khamooshi & Golafshani, 2014). In addition to being a rational decision process, project management is a process involving negotiating, bargaining, and structural reconfiguration, responding to complexities and uncertainties in business environments (Martinsuo, 2013).

Project management, as described in the PMBOK, emphasized certain aspects over others, highlighting hard skills and the need for documentation, control, and measurement of the project (Besner & Hobbs, 2012). However, Berssaneti and Carvalho (2015), emphasized soft skills as they relate to the management of stakeholders and communication skills. Söderlund and Maylor (2012) accentuated the need to balance hard and soft skills in managing projects. Jugdev et al. (2013) contended that project-management methodologies, tools, and techniques are supposed to help project managers carry out their work and effect procedures.

Patanakul (2015) suggested six attributes of project-management effectiveness divided into two components: strategic and operational. Strategic attributes include strategic alignment, adaptability to internal and external changes, and the added value of projects. The operational elements include project visibility, transparency in decision-making, and predictability in project delivery. Each attribute suggested by Patanakul eventually impacts the success of projects.

However, despite augmented business-process rigor recommended by project-management associations and institutions, projects continue to perform poorly (Moraes &

Laurindo, 2013). Notwithstanding continued project failures, project management continues to grow in importance and significance in reducing project failure. A growing body of professional associations seek to reduce failure by investing in new strategies, standards, methodologies, and tools to increase project success (Davis, 2014).

An association exists between good quality project management and project success (de Carvalho et al., 2015), leading to a proliferation of standardized project-management methodologies (Remer & Ross, 2014). Of the total variation in project success, 22.3% resulted from the project-management methodology employed (Joslin & Müller, 2015). Further, project-management maturity led to project success through the development of systematic methods, models, and tools, over time (Winch, 2014). Among factors that contributed to the success of projects and project management is the project-management methodology based on the governance structure or context of the project (Joslin & Müller, 2015). Clustered or grouped use of project management practices, tools, and techniques were more effective than individualized differences between projects and industries (Besner & Hobbs, 2012).

Pinto and Winch (2016) reviewed the science of project management, seeking to examine the importance of the early stages of project development and the complete cycle of projects from conception to successful handover. Pinto and Winch contended that the management of projects focused on tools, techniques, and normative best practices. Some studies in the field of project management such as studies by Mir and

Pinnington (2014), Badewi (2016), and de Carvalho et al. (2015) indicated some significant relationship between some project-management methods and project success. However, despite these findings, it is difficult to establish consistency in the relationship between project management and success.

In spite of associated developments and changes, as well as increased appreciation of project-management tools and techniques and the associated benefits of improving management skills among project managers, researchers continued to describe the dismal performance of projects (Alsudiri et al., 2013). Rugenyi (2016) assessed the influence of project-management competence, expressed as project-management experience and project-management professional certification on the successful management of project scope, time, and cost: the triple constraint. The ability of project managers to manage the triple constraint effectively determines the success or failure of a project. Findings by Rugenyi (2015) indicated that the years of experience of a project manager and a project manager's professional certification had no influence on the ability to manage the triple constraints. This finding supports the notion that for projects to succeed, other influencing actors influence success.

The wide use of the prescribed techniques and tools do not have a strong relationship with success (Papke-Shields & Boyer-Wright, 2017). The prescriptive nature of project-management approaches resulted in various problems including restricted usefulness, lack of acceptance, and ambiguous application (Ahlemann et al., 2013). As a

result, project managers have tended to use other strategies to manage projects for

success. Because of the internal and external environments in which projects operate,

implementing project-management methodologies have proven to be challenging (de

Carvalho et al., 2015).

Variables in the project environment complicate, confound, and render projects

complex to manage (Dao et al., 2017). Additionally, the complexity of projects and

project environment tend to result in increased project risk (Floricel et al., 2016, 2018).

Uncertainty of project results imply that the more complex the nature of the project, the

greater the risk for project failure (Moore et al., 2018). As a result of these project

complexities, the project manager's role is to ensure project teams continually adjust to

project plans (Khattak et al., 2016)

Factors that render projects complex are internal and external to the projects.

These factors may entail changing the project scope in form and size (Dao et al., 2017) or

the changing nature of interest and perspectives of stakeholders (Khattak et al., 2016;

Klein, 2016). Factors often outside the control of the project-management team include

obtaining project permits and approvals (Dao et al., 2017) technological changes

(Khattak et al., 2016), dynamics in the market environment, political and social issues,

and cultural dynamics (Dao et al., 2017; Khattak et al., 2016; Klein, 2016). This

multifaceted nature of project dynamics makes traditionally prescribed project-

management methodologies more complex, leading project managers to consider other less prescribed strategies to manage projects to ensure success.

Limitations of Traditional Project Management

The traditional project-management approach has not evolved with time and remains highly dependent on the concepts developed almost 50 years ago (Shenhar, 2015). Despite developments and research that have occurred more recently, little change has accrued to the methodologies, tools, and techniques associated with traditional project management. The concepts associated with the traditional way of conducting projects propose that a project is a compilation of activities requiring planning and execution in accordance with an encoded and predetermined process (Shenhar, 2015). The implication is that the purpose of project management is to achieve the on time, within budget, and scope objectives. Project management has therefore largely continued to rely on the use of the standard tools and such as the as network diagramming techniques, Gantt charts, critical chain, work breakdown structures, critical path, and earned value, mainly designed to manage the triple constraints. Little has changed in project-management approaches despite technological advancements dominated by the same concepts (Eriksson et al., 2017).

Various authors (Johnson et al., 2016; Shenhar, 2015; Svejvig & Andersen, 2015) discussed the insufficiency of traditional project management. For example, Svejvig and Andersen (2015) identified six categories emerging as major aspects that make classical

project management insufficient: contextualization, social and political aspects, rethinking practice, complexity and uncertainty, actuality of projects, and broader conceptualization. These aspects differentiate traditional project management and the concepts of rethinking project management (Svejvig & Andersen, 2015). These categories cover a broad range of contributions with diverse and alternative perspectives on project management.

van der Hoorn (2016) argued that the positivist conceptualization of project-management tools and techniques prescribed by traditional project-management approaches leads to challenges in the successful delivery of projects and especially megaprojects. The positivist conceptualization assumes the project manager is external to the organization and the command and control structures in the organization. The internal and external influences of the project lead to uncertainties and unpredictable realities that cannot be managed using the blueprint prescribed by traditional project-management approaches (van der Hoorn, 2016).

Research in project management lacks a strong theoretical underpinning (Drouin & Jugdev, 2013; Parker et al., 2015). Therefore, the recommendation is to apply theory from related fields. As a result, researchers in project management have tended to use theoretical constructs from well-developed concepts in the management field (Drouin & Jugdev, 2013; Papke-Shields & Boyer-Wright, 2017; Parker et al., 2015). Likewise, I applied contingency theory in this study.

Commonly cited organizational structures presented by Burns and Stalker (1961) can be either mechanistic or organic in nature (Kanten et al., 2015). Similarly, considering projects as temporary organizations, project organizational structures can be either mechanistic or organic. The characteristic of a mechanistic organization structure is high levels of formalization and standardization with functions that are largely centralized. In contrast, organic organizational structures tend to be more flexible, lean, and easily adaptable to the context and environment. Use of prescribed traditional project-management tools and methodologies tend to be mechanistic in nature in comparison to the contingency approach, which is more organic in nature.

In the project environment, the mechanistic management system entails using established conditions and complete knowledge of the project's expectations and requirements with a clear structure and work division. In the organic system, varying conditions determine the characteristics associated with managing the project, making it difficult to use a prescribed management modality from the onset of the project (Aramburu et al., 2015; Klein et al., 2015; Wysocki, 2014).

Traditional project-management approaches to assessing the performance of construction projects use a reductionist perspective, viewing a project as one unit with several processes and activities connected to achieve an identified outcome (Zhu & Mostafavi, 2017). Researchers have attributed the continued failure of projects to the reductionist approach to project management (Sage et al., 2014). Given the complexity of

projects, regardless of the size, linear thinking strategies are considered less effective;

researchers are proposing the adoption of a systematic pluralist approach to project

management (Sage et al., 2014). Systemic pluralism entails project managers recognizing

projects as systems and adopting a pluralistic approach and systems-thinking perspective

in the management of projects.

Differing perspectives of the project task among project managers mean different

ways of understanding and interpreting the work situation, leading to differing strategies

adopted to manage projects (Andersen, 2016). The significance of understanding the

inherent differences in perspectives of project managers is the impact on the adoption and

use of traditional approaches to project management. Given differences in perceptions,

project managers adopt either mechanistic or organic project-control systems (Chenhall,

2003).

Although mechanistic approaches tend to be rigid in nature, with set rules

(Chenhall, 2003), organic controls are more flexible and open-ended, involving fewer

regulations and standard procedures, largely dependent on the environment (Chenhall,

2003), similar to the contingency theory of management. The organic control system

assumes no ideal type of managing a system for the achievement of success and depends

on the changing market and technological dynamics (Ylinen & Gullkvist, 2014).

Organic project-management theory reflects two significant characteristics. First,

relaxed controls reflect the need to closely manage cooperation and communication

among project stakeholders, emphasizing timely completion of the work. Second, organic

projects welcome open communication channels with a free flow of information between

the project manager and project team subordinates (Ylinen & Gullkvist, 2014). In the

organic system, teams become self-organizing, self-sufficient, and self-directing (Klein et

al., 2015; Wysocki, 2014). From the organic perspective, project characteristics are

subject to changing conditions, and it is not possible to provide scope details at the

project's onset (Wysocki, 2014). Traditional project-management theories propose

detailing the project scope at the development stage of the stage, limiting traditional

project management (Wysocki, 2014).

Strategies to Manage Successful Projects and Contingency Theory

Van der Hoorn (2016) developed a tool to identify and visualize the critical

success factors specific to a project at any time in the project execution stage. Using this

tool, project managers can develop strategies to manage projects by identifying factors

that would lead to the greatest efficiency and effectiveness in project execution by

considering the project context and complexity.

Traditionally, project management was detached from the project context or

environment. However, project context matters to achieve successful project management

(Joslin & Müller, 2015). Despite project managers following well-defined formal rules

for project planning and decision-making, projects continue to fail (Samset & Volden,

2016). This failure has led to a shift from the idealized notion of the universality of

project management methodologies and tools toward a more contingency-based approach

to managing projects (Deng & Smyth, 2013). The perspective that not all projects have

the same influences point to the need for project managers to find ways of managing

projects differently. Project management practices, as defined currently, do not always

ensure project success (Alias et al., 2014). Rather, strategies for the management and

control of projects largely determine project success. From a strategic point of view,

using traditional project management tools alone does not adequately guarantee project

success (Hjelmbrekke et al., 2015). The diversity of factors driving project success

requires strategic management. Contingency-based approaches are becoming more

visible in the construction-management literature (Deng & Smyth, 2013).

Managing the diversity associated with projects and project teams (Hjelmbrekke

et al., 2015) requires planning and establishing a project strategy. Strategic decisions

made by the project manager define the distinction between successful projects and failed

ones. Project managers should be able to switch successfully between the early strategies

of focusing on project-success factors to later strategies of managing factors influencing

success. This proficiency calls for continuous project planning and strategic management

throughout the process of implementing the project, while reviewing and considering

various stakeholder needs and expectations (Hjelmbrekke et al., 2015).

The management of multiple stakeholders poses a challenge for project managers

in deciding which strategies to employ to ensure project success. Strategies must address

different and sometimes contradictory success perceptions of project stakeholders (Davis, 2014). Successful project managers effectively manage to address stakeholders' expectations while correspondingly managing the triple constraints of time, cost, and scope. Managers simultaneously maintain positive and constructive communication and working relationships with the project team and stakeholders (Ahmed & Anantatmula, 2017).

Project managers and portfolio managers consider standardized formal project-portfolio management methods and models used in practice insufficient in managing projects for success (Jerbrant & Gustavsson, 2013). Projects are complex and operate in unstable and continually changing environments (Klein et al., 2015). Addressing the complexities of projects and management of projects entails the use of combinations of multiple schools of project management and improvisational practices. Project managers simply rely on their knowledge rather than on strict protocols or tools when managing projects for success. This type of behavior is improvisational; an aspect of project-management practice not adequately addressed in principal project-management theories (Klein et al., 2015).

To manage the turbulent environments in which projects operate, project and portfolio managers require *action space* (Jerbrant & Gustavsson, 2013). Action space provides stability in the need for structure and flexibility (Jerbrant & Gustavsson, 2013). Project and portfolio managers use improvisational strategies and actions in these action

spaces outside formal project-management techniques and tools. Improvisational

strategies and actions present an opportunity for the rapid decision-making required in

project and portfolio management (Jerbrant & Gustavsson, 2013; Klein et al., 2015).

One reason for project failure is the impact of unexpected events during the

project cycle. Laufer et al. (2015) studied how project managers cope with unexpected

events during the project cycle to ensure the success of the projects. Findings by Laufer et

al. indicated that successful project managers use a combination of traditional and agile

approaches similar to contingency-based approaches to ensure project success. Project

management is increasingly becoming more strategic and business oriented (Shenhar,

2015). The increasing strategic orientation of project management requires new

approaches. Strategic project leadership as an inclusive approach to managing projects

that combines the strategic, business-related features of projects; the contextual aspects of

projects; and the need to adapt to the environment, the team leadership perspectives of

project management, and the conventional triple constraint of time, budget, and

performance needs of the project (Shenhar, 2015). To achieve success, project managers

ought to address the strategic and business aspects of their projects while adapting their

styles of management to the project and environmental context.

The management and control strategies of projects largely determine

construction-project success (Alias et al., 2014). Success requires leadership strategies to

manage and control projects at all stages of the project cycle. Variables critical for project

success include project-management action, project procedures, human factors, external

issues, and project-related factors, defining the development of project leadership

strategies by project managers (Alias et al., 2014). Project success in the construction

industry requires project managers to have three types of knowledge: project-

management knowledge, knowledge through experience, and industry knowledge in their

knowledge set (Burger et al., 2015). For a project manager to be effective, they needed

general management and interpersonal knowledge, project management, and technical

knowledge and experience. A combination of this knowledge is strategic for project

success (Burger et al., 2015).

Because of the complexities associated with project management, project

managers have tended toward creativity, spontaneity, and intuitive application of theories

to meet project objectives in a constantly changing environment (Klein et al., 2015). No

one tool or school of thought can resolve all problems and complexities of managing

projects successfully (Klein et al., 2015). This view aligns with contingency theory, a

perspective that refrains from an approach advocating for a single effective path (Kujala

et al., 2014). The contingency-theory perspective suggests that most successful projects

are likely those whose project managers find the best fit between strategies and project

context (Shenhar, 2015). The proposed improvisation, like contingency theory, advocates

for the selection of the best tool, approach, or strategy in any context and situation.

By definition, projects and project designs are novel and tend to be complex, unique, and unpredictable (Shenhar, 2015); as a result, project managers recognize the need to develop strategies to manage and control projects for success (Alias et al., 2014). Project managers are likely to use various and divergent approaches in developing strategies for specific projects to ensure success. Laufer et al. (2015) studied how project managers cope with unexpected events during the project cycle to ensure the success of the project and found that successful project managers use a combination of traditional and agile approaches to ensure project success.

The various approaches adopted change at different stages of the project cycle. During the early stages of the project, project managers develop collaboration with various stakeholders (Laufer et al., 2015). Periodically, project managers integrate planning and review with learning and occasionally implement strategies to prevent major project disruptions while ensuring the project continues with the expected momentum. These roles require undertaking various activities at different stages of the project and require that the project manager develop strategies contingent to the context and the stage in the project cycle (Laufer et al., 2015).

Project managers use different project-management approaches prescriptive and adaptive approaches or strategic project-management approaches in projects (Rolstadås et al., 2014). Project managers espouse either traditional or adaptive project management approaches when managing projects for success. Project managers adopt strategic ways

to manage projects, dependent on the project situation and other project factors, according to contingency theory (Andersen, 2016). Various perspectives prevail among project managers on how to manage projects for success, considering their tasks differently. Differences in perspectives mean different ways of understanding and interpreting the working situation and therefore varying strategies and approaches to manage projects (Andersen, 2016).

Using the concept of systems lifecycles and systems theory, projects are multiple organizational systems that link the execution of the project to the operational phases (Artto et al., 2016). This view implies that projects result in value creation from execution to operation in the lifecycle of the system. Project execution translates into operation through a network of multiple self-organizing systems (Artto et al., 2016). Viewing projects as a system of self-organizing structures, mutual adjustment and collaboration in the systems network of project organizations markedly determines project success compared to the blueprint traditional approach proposed by traditional project-management theories (Artto et al., 2016).

Complexity and uncertainty in projects remain a major area of discussion in the successful management of projects with the two terms interrelated (Klein et al., 2015; Saunders et al., 2015). Combined with increased complexity of the project is increased levels of uncertainty (Brink, 2017). Shenhar and Dvir (2007) clearly elaborated on the significance of understanding uncertainties in projects by using the diamond model.

According to Shenhar and Dvir, projects align with four dimensions of uncertainty: novelty, technology, complexity, and urgency. High levels of complexity in projects tend to have a greater impact on uncertainly and therefore the management of projects should be determined by the levels of complexity (Eriksson et al., 2017).

According to Eriksson et al. (2017), traditional project-management practices, focused on straight-line control, are best suited for simpler straightforward projects with higher levels of certainty. Projects that are more complex require less traditional project-management approaches that promote flexibility (Eriksson et al., 2017). Saunders et al. (2015) developed a framework to understand the basis of uncertainty in projects, categorizing four theoretical ways to reduce the impact of uncertainty on project delivery to achieve project success outcomes based on project complexity.

Complexity in projects relate to the environment in which the project operates and the governance structures of the project (Eriksson et al., 2017). With the increasing complexity of project environments is the increasing complexity of applying traditional project-management approaches and tools (Eriksson et al., 2017). Klein et al. (2015), therefore, advocated for a praxeology framework that transcends the universal and dogmatic nature of current project-management theories, proposing the use of improvisation to address project context. Project managers tend to assess the complexity of the project and decide to use either rational formal or informal project-management models (Brahm & Tarziján, 2015).

When comparing the complexities of two successful projects, Heathrow Terminal 5 and the London 2012 Olympic Park projects and the management of the complexities, Brady and Davies (2014) found significant differences in the approaches used by project managers responsible for the two projects. The project team for the Terminal 5 project created a highly controlled umbrella framework based on consistency and standardization and a code of behavior for use across all major projects and subprojects associated with the megaproject. In contrast, the Olympic delivery authority preferred a "tight–loose" approach with a greater level of autonomy in approaching the projects and subprojects. Regardless of the approach used, both projects recorded success in on-time delivery, within budget, and expected quality. Clearly from the success of the two projects, a single method of managing projects is not appropriate for all projects. Brady and Davies amplified the argument for use of different approaches and strategies by project managers to ensure the success of projects with their given complexities.

Given the significance of project governance on project management, Zwikael and Smyrk (2015) considered stakeholder theory, stewardship theory, resource-dependency theory, principal-agency theory and, institutional theory as a way of viewing project governance and its likely influence on project performance. These theories emphasize the importance of relationship building among the various project stakeholders (Bredillet et al., 2015). Project governance means achieving a balance among the varying perspectives of principal investors, executing agencies, beneficiaries, and users (Klakegg

et al., 2016). In achieving successful projects, relational and contractual governance are complementary rather than substitutes, with the management of contractual governance more significant in supporting project performance than relational governance (Lu et al., 2015).

In megaprojects, the traditional concepts of project-governance and project-management practices do not reflect the contemporary knowledge of project complexities (Klakegg et al., 2016). Complexities and high risks of megaprojects, using formal systems of project management, lead to limitations (Klakegg et al., 2016). Wysocki (2014) proposed four models to manage projects, depending on their complexity and governance structures. First, the traditional project-management approach is suitable for projects operating under established and secure conditions, with unambiguous goals and solutions (Wysocki, 2014). The agile strategy is proposed for use when project goals are clear and the project has a partially unknown solution (Wysocki, 2014). The third and fourth project-management strategies are the emertxe and extreme project-management styles, suitable for developing applications for new technologies with clear solutions and unclear goals, and situations where the solution and goals are ambiguous, such as in research and development projects, respectively (Wysocki, 2014). Clearly, the type of project, the project environment and governance structure, the uncertainties associated with projects, and the project complexity determines the strategies adopted by project managers to achieve project success.

Transition

The focus of this doctoral study was on Zambian construction-project management and strategies to avoid infrastructure-project failure. Section 1 comprises the foundation of the study, with subsections that include the background of the problem, the problem statement, the purpose statement, the nature of the study, the research question, and the interview questions. Additional subsections are the conceptual framework, operational definitions, significance of the study, and a review of the professional and academic literature. Section 2 provides the details on the role of the researcher, the participants, the population, and the sampling. Also included in Section 2 are the research method and design, the management of ethical issues, and a description of the processes for obtaining, collecting, and analyzing data. In Section 3, I explain the findings of the study based on the data collection and analysis process described in Section 2. I also include the application of the study findings to business practices and contributions to social change in Section 3. Additionally, I include recommendations for action by professional practitioners and areas for possible future research.

Section 2: The Project

Section 2 of this doctoral study includes the purpose statement, the role of the researcher, the participants, the research methods and design, the population, and the sampling method. Also included in this section are ethical considerations in the research, data collection and data-collection techniques and instruments, data analysis, reliability, and validity of the research.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies Zambian construction project managers use to avoid infrastructure project failure. The population for this study comprised project managers working in Lusaka, Zambia. Project managers were from five public and private construction companies in Zambia who had implemented successful strategies to avoid infrastructure-project failure. The results of this study contribute to social change by including the potential for economic growth and improved quality of life for affected communities because of the enhanced, well-planned, and efficiently implemented infrastructure projects

Role of the Researcher

As a qualitative researcher, I was the sole instrument for collecting data while maintaining research credibility, reliability, and rigor. As the sole data-collection instrument, it was my role to identify personal biases likely to arise in the research process. While allowing for personal views and perspectives, selective observation and

recording of information may result in research biases in the resulting analysis. Accounting for biases ensures that in understanding the responses from participants, personal biases during data collection and analysis do not cloud the judgment or interpretation of the results (Cypress, 2017). To mitigate bias in this study, I used reflexivity to identify and examine my personal perceptions resulting from my experience, ideologies, and values. Reflexivity entails critical self-examination and reflection on potential biases and predispositions (Cypress, 2017). By proactively recognizing likely biases as a researcher, I guarded against the potential prejudice intrinsic to qualitative research.

It was my responsibility to ensure the research was rigorous and reliable. Study protocols provide a comprehensive outline of the methods used to conduct research; therefore, researchers must develop detailed study protocols (Peters & Halcomb, 2015). I ensured that the research was sufficiently rigorous by outlining the detailed study protocol. Based on the recommendation of Peters and Halcomb (2015) that study protocols should be comprehensive and include an interview protocol, the study protocol for this research included the interview protocols to ensure consistency in the interview format and content. Study protocols and developing consistent approaches ensure that the research minimizes variations that may result in inconsistencies and biased analysis and results (Benia et al., 2015).

My role was to ensure fair treatment of the participants while upholding high
ethical standards. I used the Walden University research-ethics planning worksheets as a
guide to ensure I did not compromise ethical standards. It was my responsibility to
evaluate the ethical concerns likely to arise in conducting the interviews and document
the results. Yin (2014) recommended ways to guard against unethical practices in the
qualitative research process during data collection, analysis, and recording of the results,
to which I adhered to.

My role was to ensure that I respected participants' rights to autonomy. I achieved
this by using the informed-consent process recommended by Grady (2015). The use of
the informed-consent process form guarded against any likely unethical practices.
Member-checking is dependable to ensure the research is reliable and valid (Harvey,
2015; J. M. Morse, 2015). As a researcher responsible for ensuring rigor, reliability, and
validity while upholding ethical values and protecting the participants' autonomy, I used
member checking to validate the transcriptions with the participants.

Participants

Five project managers who have implemented successful strategies to avoid
infrastructure-project failure were selected to participate in the study. Kristensen and
Ravn (2015) proposed a criterion for selecting participants of a qualitative study that
includes proven in-depth knowledge and experience of the subject matter, having tacit
knowledge, the ability to co-create knowledge, and the ability to contribute

comprehensively to the central research question. According to Yin (2014), a case study

could have, at minimum, three and up to eight research participants. Accordingly, Roy et

al. (2015) proposed that three to five participants would suffice for a case study. Elo et al.

(2014) posited that no commonly accepted sample size exists for a qualitative study;

rather, the purpose of the study, the research questions, and the quality and richness of the

data collected define the ideal sample size.

I purposively selected five project managers to participate in the study. I chose

project managers with a positive history of successfully delivering infrastructure projects

in the energy and road sectors. As a first criterion, participants for this research were

adults who had served as project leaders for 5 years or more. The criteria did not require

that the individual's title be project manager. However, any employee whose job included

managing projects was eligible. Second, only those who had led projects deemed

successful by the executive management and the Project Management Association of

Zambia were eligible.

My first strategy to gain access to potential project-manager participants for this

study was to contact the Project Management Association of Zambia to identify project

managers associated with managing successful projects. The first contact with potential

participants was through telephone, followed by an e-mail requesting a face-to-face

interaction with participants. Once I secured participation, the participants and I mutually

agreed on the interview's place, date, and time. I did not use any incentives or enticement to solicit engagement in the study, as Robinson (2014) recommended.

Research Method and Design

Palinkas et al. (2015) argued that researchers use three main methods, with multiple designs associated with each method. The researcher's responsibility is to select the most appropriate method and design to answer the research questions. The research method and the associated design serve as blueprints to connect the research elements to the questioning and resulting conclusions from the research (Leedy & Ormrod, 2013). Case study, narrative, phenomenology, and ethnography are the common qualitative research designs (Bradbury-Jones et al., 2017).

Research Method

A qualitative method is most suitable for research studies to understand the "what," "how," and "why" of a given topic (McCusker & Gunaydin, 2015). This study aimed to understand what project-management strategies construction project managers use to manage projects successfully. The research question was exploratory; therefore, a qualitative method was the most appropriate method. Pathak et al. (2013) indicated that when researchers aim to use humanistic interactive methods to collect open-ended information from various sources, the most appropriate methodology is the qualitative approach. In the same vein, quantitative researchers desire to observe the themes emerging from collected data (Campbell, 2014). In understanding the different strategies

used in managing projects, I asked "what" and "how" questions while using humanistic

and interactive methods to collect data.

Researchers use quantitative methods to test a hypothesis (Palinkas et al., 2015),

provide explanations based on causality (Campbell, 2014), and quantify and validate

results statistically (McCusker & Gunaydin, 2015). This research did not aim to test a

hypothesis, prove causality, or statistically validate the results; therefore, the quantitative

method was unfitting for this study. The mixed-method approach combines qualitative

and quantitative methods (Guetterman et al., 2015). Birchall et al. (2016) argued that

researchers must synthesize and integrate data for mixed-methods research. Mixed-

methods research is useful when one data-collection technique is insufficient to respond

to the research question such that the researcher must combine qualitative and

quantitative data-collection techniques (Birchall et al., 2016). The mixed-methods

approach was inappropriate because I did not collect quantitative data for this study.

Neither quantitative nor mixed methods approaches would address the research question

appropriately.

Research Design

Circumstances and certain situations determine the suitability of using the case

study as a suitable research design (Lunnay et al., 2015). Case studies focus on existing

events that have various fragments (Yin, 2014). The focus of this study was infrastructure

projects successfully implemented by project managers in Zambia. Therefore, the

research questions and the subsequent literature centered on existing business cases of

project management. Using the case-study design enables a researcher to holistically and

intensely examine, explore, and contextualize participants' various views, knowledge,

and experiences into a single business problem (A. Morse & McEvoy, 2014). Using a

multiple-case research design made the study more robust than a single-case study.

Other possible qualitative research designs include phenomenology, narrative, and

ethnography (Sutton & Austin, 2015). Phenomenology as a research design focuses on

exploring participants' behavior to understand how humans perceive and experience a

phenomenon or event (Finlay & Elander, 2016). Phenomenology is best suited to

understanding participants' subjective opinions, experiences, and ideas (Sutton & Austin,

2015). Bawa and Watson (2017) used the phenomenological design to understand

cultural, social, and physiological issues faced by Chinese graduate students required to

write in English based on their lived experiences. However, the proposed study did not

explore the lived experiences or opinions, ideas, and attributes of project managers;

instead, the study focused on strategies used to attain project success. The

phenomenological design, therefore, was unsuitable for my research.

When a research question relates to particular life stories of participants, the

narrative design is suitable (Lewis, 2015). Researchers adopt storytelling in conveying

information to provide insight into the subject matter under study (Bell, 2017). According

to Bell (2017), researchers use the narrative design when studying special groups such as

marginalized individuals. My research question did not consider participants' life stories, nor was it necessary to collect personal information from participants; thus, the narrative design was inapt for this study.

Researchers adopting the ethnographic design use direct observation of participants to understand people's real-life environments and systems (Sarmento et al., 2017; Sutton & Austin, 2015). Hammersley (2018) posited that researchers using ethnographic designs collect data by directly observing people's behaviors in their social settings and communities. Therefore, the ethnographic design was inappropriate for my study, given that I did not observe participants and their behavior in their social setting.

Population and Sampling

The population in this study consisted of project managers in Zambia. This population category was suitable for the study as it provides an understanding of the Zambian context of managing projects. The idea of selecting the relevant sample was to select participants rich in information by virtue of their experiences concerning the study phenomenon (Yin, 2014) and with analytical transferability (Gentles et al., 2015). The sample in this study consisted of five project managers working in Zambia who delivered successful infrastructure projects between 2008 and 2018. In selecting the sample and the sample size, the two essential considerations proposed by O'Reilly and Parker (2013) are adequacy and appropriateness for the topic under study. I therefore used purposive criterion sampling of participants for the study.

Other than purposive sampling, an alternative sampling method is convenience sampling. Convenience sampling is a nonrandom or nonprobability sampling where specific functional criteria determine the inclusion of members participating from a target population (Stratton, 2021). These criteria include a willingness to be part of the study, geographical proximity, and availability at a given time. Convenience sampling was inappropriate as a sampling method for this study because the intention was to recruit participants based on predetermined attributes (Etikan et al., 2016).

Purposive sampling allows for depth of the collected data (Ames et al., 2019; Barratt et al., 2015), offering the most appropriate way to select project managers with a comprehensive understanding of the phenomenon under study. Purposive sampling, as a technique for selecting participants, yields participants who can provide the most appropriate information (Ames et al., 2019; Patton, 2015). In a qualitative case study, the information power of participants is more important than the number of participants (Malterud et al., 2016). According to Patton (2015), information power entails that few participants are required if the sample holds sufficient information relevant for the study. Yin (2014) proposed that a case study can sufficiently use three to eight participants, based on the information power of that population. What matters is to achieve data saturation. The achievement of data saturation means that no new data or themes emerge during the interviews (Fusch & Ness, 2015). Although the proposal was to interview five participants in this study, I aimed to achieve data saturation by reviewing documents and

conducting interviews until no new information or themes emerged. Additionally, I went back to the interviews to ensure that enough data was collected and achieved saturation.

Ethical Research

Conducting ethical research entails guaranteeing that human participants are protected from harm and risk while maximizing benefits (Shamoo & Resnik, 2015). Ethical research safeguards human dignity and privacy while ensuring equitable distribution of the benefits and burdens of the research (Arifin, 2018). To ensure that research using human participants is ethical, the use of informed consent is an essential aspect of the process (Riordan et al., 2015). *Informed consent* means the participants willingly and intelligently agree to participate in the research. Consent is clearly and manifestly made while assuring respect for the individual's autonomy and self-determination (Fleming & Zegwaard, 2018). Additionally, informed consent allows the researcher to communicate the research objectives, the potential risks, and the benefits of the research to participants (Arifin, 2018). I therefore used informed-consent forms as one instrument to achieve ethical research.

To enhance the value of informed consent, Bernhardt et al. (2015) cautioned, researchers need not put the same weight on all components of the informed consent form. Instead, Bernhardt et al. recommended emphasizing the components that may lead to misunderstandings or misconceptions. To this effect, the informed-consent form included the following elements:

- an invitation to consent and assurance of the voluntary nature of participation

- information on the purpose of the research

- an explanation of the processes to be followed

- benefits and risks associated with participating in the study

- issues of confidentiality, including identifiability and privacy and the limits to confidentiality

- alternatives to participation include the right to withdraw from the research

- the treatment of the data collected

- contact information in case of any questions

The Walden University Institutional Review Board (IRB) reviewed and approved the consent form and the proposed data-collection process before data collection began. My IBR approval no is 11-1519-0544407.

To guard against any misunderstanding of the consent form by participants, I summarized and reviewed the informed-consent form with participants before collecting any data. I stressed the critical components of the form based on recommendations from Bernhardt et al. (2015). Areas of explanation to participants focused on their right to withdraw from the study, assuring participants their participation was voluntary. I also highlighted no form of coercion or incentive for participation, using recommendations by K. A. Smith et al. (2015). I did not apply any incentives in this research study to avoid compromising the ethics and quality of the study.

Drake and Yu (2016) recommended that transparency on the risks associated with the study and anticipated benefits are crucial components of ethics in research. In my summary to participants, I clearly explained that there were no risks to participants. I also allowed for questions from potential participants based on recommended best practices (Bernhardt et al., 2015; Grady, 2015; Riordan et al., 2015). Participants endorsed the consent form upon understanding and accepting to be part of the study. No data collection commenced prior to receiving signed consent forms.

One other critical aspect of ethical research is for participants to understand their right to withdraw from the study at any point during the research. Despite participants' adverse effects of withdrawal from the study (Thorpe, 2014), interviewees must understand their right to withdraw without penalty. As part of the consent process, I informed participants of their rights to withdraw their participation at any stage in the research process through electronic or verbal communication, using my contact details.

One researcher's responsibility is to maintain the confidentiality of participants and the companies for which they work (J. M. Morse & Coulehan, 2015; Wallace & Sheldon, 2015). To achieve confidentially, I used codes and pseudonyms for participants, projects, and companies involved in the study. Each participant had a unique identification number. In contrast, each project and company had an identifier code such as P1 for project one and C1 for company one. I did not use any actual names in the research document. Further, I will secure all the data collected as notes and audio

recordings by locking them in a safe cabinet for 5 years. After 5 years, I will delete all electronic data collected and shred the notes.

Data Collection Instruments

For The primary instrument for data collection in qualitative research is the researcher (Stewart et al., 2017). As the data-collection instrument, researchers interact with participants and seek to understand behaviors, making inferences while developing meanings and understanding of the subject of the study (Othman & Hamid, 2018). Therefore, as the researcher, I was the primary data-collection instrument, collecting detailed information from participants to understand the subject under study and interpreting the information while ensuring trustworthiness and credibility.

Paradis et al. (2016) outlined data-collection techniques that include documentation from the company, interviews, focus groups, participant observations, and questionnaires. Interviews in qualitative research are a means to obtain information on the subject matter and develop an in-depth appreciation of a participant's understanding of the research question through dialogue (Rowley, 2014). Interviews generate a detailed understanding of a participant's experience and appreciation of the subject matter under research (Hofisi et al., 2014). Accordingly, O'Keeffe et al. (2016) proposed using semistructured interviews to investigate the "what," "why", and "how" of the research participants' experiences. I used one-on-one semistructured interviews, interview notes, and archival records as the data-collection techniques for this study.

Semistructured interviews provide an in-depth collection of rich data by the researcher based on participants' knowledge of the topic of study, providing flexibility and consistency (Dikko, 2016). Dikko (2016) posited that a semistructured interview technique allows researchers the agility to ask questions in a predetermined order while remaining flexible during the interview process by using an open framework. Rowley (2014) recommended that novice researchers use 6 to 12 well-written research questions. I used six questions for my research, as indicated in Section 1 of this proposal. I also attached the interview protocol as an Appendix. Researchers use interview protocols as a guiding instrument during the interview process to ensure consistency throughout the interview process (Castillo-Montoya, 2016; Heydon & Powell, 2018).

Researchers commonly review documents related to the subject matter to validate the research (B. Smith & McGannon, 2018). A review of documents is also helpful for data triangulation, and confirmation of the information gathered from the interviews (Padgett et al., 2017). Yin (2014) recommended using documents, including company records, in case-study research. To achieve data triangulation and enhancement of the quality of the research, I reviewed project documents that included the project charter, project implementation, communication plans, project budgets, monitoring, and evaluation reports that the interviewees shared.

The use of nonverbal cues exhibited during interviews serves to validate interviewee responses. Documentation of nonverbal communication during interviews is

a common practice in research as a means of enhancing data validity and increasing the credibility of the results (Bonaccio et al., 2016; Oltmann, 2016) and is appropriate in qualitative case-study research (Onwuegbuzie & Byers, 2014). I noted the nonverbal cues in the interview observation notes, which augment the consistency of the data collected during the interviews.

Member-checking allows the interviewee to check for any inconsistencies in the researcher's transcripts (Birt et al., 2016) while providing an opportunity for researchers to confirm the records of the interview (Simpson & Quigley, 2016). Member checking provides a means of validating the researcher's understanding of the responses to the interview questions, thereby ensuring research validity, reliability, and quality (Birt et al., 2016; Hadi & Closs, 2016; Harvey, 2015). Participants can confirm the accuracy of the research analysis and provide feedback and clarification through member-checking (J. M. Morse, 2015), thereby enhancing the trustworthiness of the research findings (Birt et al., 2016). To augment the research's validity, reliability, and trustworthiness, I provided time for member-checking with participants by sharing the transcripts and the results with the respondents to ensure the correct interpretation of the responses.

Data Collection Technique

The quality of data collected in a qualitative study determines the quality of the research (Noble & Smith, 2015). Qualitative researchers typically apply various techniques to collect data on the study phenomenon from participants in their

environment (Makrakis & Kostoulas-Makrakis, 2016). Data-collection methods available to researchers include directly observing participants in their natural environment, undertaking in-depth interviews, analyzing existing documents and records, participating directly in the research setting, and conducting focus groups (Paradis et al., 2016). The selection of the best data-gathering method depends on the research design and what the researcher needs to accomplish (O'Cathain et al., 2015). To understand the project-management strategies used by project managers to ensure the success of construction projects, I chose to use interviews as the principal data-collection method.

Qualitative researchers prefer interviews as a suitable data-collection technique because it helps understand interviewees' experiences (Rowley, 2014). Interviews allow the researcher to ask targeted questions about a given study area, providing an opportunity to gain deeper insight into the phenomenon under research (Yin, 2014). Interviews have the potential to yield rich data because they accord the researcher and the participant the ability to engage in direct conversation (Ranney et al., 2015). Interviews also allow the researcher to see participants' facial and bodily expressions and gestures that may provide different connotations to the responses (Babbie, 2015).

Researchers use three types of interviews: unstructured, semistructured, and structured (Ranney et al., 2015). Unstructured interviews take place with few or no interview questions and questions asked spontaneously, progressing in a regular conversation; however, the focus of the conversations is on the topic of the study under

review (Ryan et al., 2009). Semistructured interviews use a well-defined interview protocol, guiding the researcher during the interview process (Dikko, 2016). The interview protocol provides a framework to guide the interviewer on the questions to ask, the sequencing of those questions, and which ones to pursue in greater depth (Jacob & Furgerson, 2012). By using the interview protocol, the interview process is likely to be more focused and guided to ensure optimal use of the limited available time for an interview. At the same time, the use of interview protocols makes the interview different people more methodical, comprehensive, and thorough by defining the issues to be explored in advance.

Using semistructured interviews yields two significant advantages. Interview protocols ensure consistency in data collection, thereby enhancing the quality of data collected (Dikko, 2016). Semistructured interviews allow flexibility, creating a more natural and comfortable environment for researchers and participants (Yin, 2014). Defined structures of some kind guide the discussion between the researcher and the participant in a semistructured interview while providing the researcher with the flexibility and ability to probe the interviewee for further details. Structured interviews, in contrast, strictly adhere to the use of an interview protocol as a guide for a researcher (Dikko, 2016), restricting a researcher to asking only the questions appearing in the interview protocol.

Semistructured interviews enable the interviewer to obtain rich, comprehensive data (Gelling, 2015). Additionally, the informal nature of semistructured interviews provides an atmosphere that encourages openness and honesty for the participant (Jong & Jung, 2015). The flexibility associated with semistructured interviews permits the researcher to alter the interview questions and adjust the pace and direction of the interview to suit the circumstances (Jong & Jung, 2015). One disadvantage associated with semistructured interviews is the likely biases that may arise from the interviewer's embedded assumptions, prejudices, and stereotypes (Hofisi et al., 2014). Semistructured interviews require sufficient time to collect and analyze data (Jong & Jung, 2015). I used a semistructured on-site face-to-face interview process using the interview protocol to allow for flexibility during the interview process (see Appendix A). I recorded the interviews using a digital recorder.

When identifying the participants for the study, I contacted the PMI of Zambia for the list of their members that had a history of implementing successful construction projects. Following which I purposefully selected eight project managers, whom I contacted by telephone to introduce myself, the study I was undertaking and requested for their participation in the study through a face-to-face interview at their convenience. I further explained that there were no incentives for participation in the interviews. I managed to secure interviews with five of the participants. Prior to the interviews, the participants were requested to sign off the consent form.

While undertaking semistructured interviews, Ranney et al. (2015) recommended beginning the interview with a statement introducing the objective of the research, an explanation of the ground rules, and a statement about the confidentiality aspects of the study. Starting the interview like this minimizes the interviewee's anxiety and creates rapport and a friendly environment (Ranney et al., 2015). Using the recommendations by Ranney, I began the interviews by introducing myself and the topic of the research. I highlighted the ground rules of the study, explaining that the participant was free to leave the interview at any time during the interview. This option made the participants comfortable. Substantive interview questions followed the setting of ground rules, and I probed the participants through follow-up questions to clarify issues and gather greater detail. Based on the recommendations by Ranney et al. (2015), I concluded the interview by debriefing and providing a summary of the interview to the participant.

Researchers endeavor to deliver unbiased studies by reducing researcher and participant biases, increasing the validity of the findings, and strengthening the study by using several data-collection techniques yielding triangulation (Gibson, 2017). Triangulation is a procedural research technique that supports the authentication of research findings (Gibson, 2017). Triangulation of various primary and secondary data sources ensures the vigor and trustworthiness of the research while enhancing the researcher's appreciation for and understanding of the phenomenon under study (Carter et al., 2014). Abdalla et al. (2018) viewed triangulation from two viewpoints: first,

construct validity, and second, gather new information and knowledge. Triangulation

involves using different investigation methods to understand the same phenomenon

(Kern, 2018; Turner et al., 2017) to facilitate validation of the data collected and improve

the accuracy of the observations (Kern, 2018). In addition to using semistructured

interviews to collect data on the research question, I used interview observations and

project records to validate the collected data. During the interviews, I took notes of some

areas of emphasis as non-verbal cues from the interview observations. Additionally, three

of the participants offered me project documents to review. The information collected

informed the data analysis.

Using interview observations allows the researcher to capture nonverbal cues as

participants answer the questions. One advantage to interview observations is that the

researcher may notice something in the participant's body language that could lead to

new insights not covered in the interview questions (Bonaccio et al., 2016). Although

researchers can gather rich data using nonverbal cues, qualitative researchers seldom use

nonverbal cues to report findings (Onwuegbuzie & Byers, 2014). Using project records to

verify project facts is appropriate for achieving validity in qualitative studies (O'Leary,

2014). One advantage of using records is the ease of access to data (Hemkens et al.,

2016). A disadvantage of using company records is that the data may not be specific to

the researcher's needs (Doolan et al., 2017). Participants offered the project documents

for my use during data analysis. The Project records include the detailed project concept

and design including the project timelines and estimated costs, project completion reports

that highlighted the implementation process and timelines, including the challenges faced

during implementation and the mitigation measures employed by the project manager to

avoid failure.

Hadi and Closs (2016) proposed using member-checking during the data-

collection process to enhance the validity and reliability of the study. Researchers use

member checking to achieve accuracy of the researcher's interpretation of the

participant's responses to interview questions (Birt et al., 2016) and enhance the findings'

credibility (Simpson & Quigley, 2016). Following the transcription of the data and the

initial data analysis, I conducted member-checking with the interviewees to validate the

interpretation of interview responses and ensure the accuracy and completeness of

responses. All the participants confirmed the information as true record and interpretation

of the responses.

Data Organization Technique

Data organization based on emerging patterns, themes, and categories is important

in the research process (Braun et al., 2019). It enables researchers to systematically

arrange the data for ease of analysis (Wu et al., 2018). Neale (2016) suggested the

following steps in organizing data: (a) transcribe the data, (b) check for consistency and

contradictions, (c) identify possible codes, (e) categorize and code the themes and

emerging patterns, and (e) document any conflicting data. To maintain the confidentiality

of participants, Melville and Hincks (2016) recommended the use of pseudonyms to identify participants and their organizations. Researchers use coding as a data-organization tool to cluster comparable perceptions into groups and subgroups to answer the study question (Ose, 2016). The data collected was labeled using the assigned participant number as P1 to P5.

Using the steps, Neale (2016) recommended, I applied the guidelines recommended by Marshall and Rossman (2016) to organize interview data by labeling all recorded audio files, interview memoranda, and journals to ensure that I organized the data collection effectively immediately following an interview. Buys and Shaw (2015) proposed 5 years as sufficient time for the researcher to possess the research data. The raw data was securely locked up in the office safe with intentions to erase all electronic data and burning all memoranda after 5 years.

Data Analysis

The process of data analysis begins with the engagement of the first research participants and is a continuous process until finalizing the report (Vaismoradi et al., 2016). According to Neale (2016), data analysis comprises three activities undertaken concurrently. First, a researcher reduces the data into a more straightforward, manageable form, simplifying and transforming the raw data into abstracts. A researcher must compile and simplify the multiple sources of qualitative raw data in preparation for data analysis (Johnson et al., 2016). A researcher then interprets the data in line with the

purpose of the study. I repeatedly read the transcripts to acquaint myself with the content and concurrently undertook the three processes of conceptualizing, differentiating and externalizing the data as recommended by Neale (2020).

During the data analysis process, researchers use the raw data to describe, classify, and create interconnections of the phenomenon with the researcher's conceptual framework (Mayer, 2015; Wu et al., 2018). I used the data analysis process to shape the data, contrast and categorize the data based on the conceptual framework, and garner themes emerging from the comparisons using categorical aggregation and content analysis (Mayer, 2015). I sorted and coded the data using Microsoft Word based on emergent themes and created sets of numerical codes for the emerging themes and patterns. By applying the emerging key themes, researchers compare the reviewed literature and conceptual framework to answer the research question and draw conclusions (Gelling, 2015).

Mind mapping is a process in data analysis involving structuring data in a visual display based on the emerging themes, categories, patterns, and concepts (Kotob et al., 2016). Mind maps are a helpful graphic technique used by qualitative researchers to make sense of large amounts of data for analysis (Neale, 2016) and extract original meanings developing from the raw data (Sümen & Çalisici, 2016). I used mind mapping in organizing the raw data to develop emergent themes, categories, concepts, patterns, and

associated interrelations. Mind mapping enable me to breakdown the interview data as I was transcribing it into simpler data for analysis.

Data triangulation, also known as participant triangulation, entails a careful review of the data collected from different respondents or different data sources (Almalki, 2016). As a data-analysis process, researchers use data triangulation to discover emergent patterns or contradictions among individual participants with unique and valid world views (Carter et al., 2014). Data triangulation is used in qualitative research to analyze and interpret varied types of data collected for a given research topic. Data triangulation enhances data analysis and enriches the validity of the study (Fusch & Ness, 2015; Marshall & Rossman, 2016). I used data triangulation by analyzing multiple data sources, including interview findings, and reviewing project records provided by the participants of some of the projects they are successfully implemented to augment the soundness of the results.

Reliability and Validity

The validity, reliability, and transferability of qualitative research are essential aspects in designing, analyzing, and interpreting qualitative data and determining the eminence of a qualitative study (Fusch & Ness, 2015; Marshall & Rossman, 2016). According to Gelling (2015), credibility, dependability, transferability, and data saturation authorize the reliability of the findings of a qualitative study. Dependability in

qualitative research equates with reliability in quantitative research (Gunawan, 2015). The following sections provide a detailed discussion of reliability and validity.

Reliability

Reliability in qualitative research requires the researcher to demonstrate the soundness of the research aligned with the appropriateness and the application of the methods used and the integrity of the findings for future dependability and replication (Cypress, 2017; Venkatesh et al., 2016). A researcher's role to demonstrate the reliability of the research is to confirm the research results and inferences as consistent with the raw data (Baillie, 2015) such that future researchers may repeat the study and find the same conclusions (Fusch & Ness, 2015; Noble & Smith, 2015). A researcher's concern is to demonstrate the findings' consistency, dependability, and repeatability (Venkatesh et al., 2016).

To achieve reliability, Baillie (2015) and Noble and Smith (2015) proposed the researcher report, in great detail, the processes followed in the study and demonstrate transparency in data analysis. Harvey (2015) recommended reporting all elements of the research, including the research design, data collection and analysis, the effectiveness, and any changes likely to affect study findings. Using processes by Harvey, I provided details about the research method and design, the role of the researcher, the participants, the population and sampling, the data-collection instruments, organization and techniques, and the data analysis process.

Validity

The assessment of the richness, thickness, and depth of the data provides a valuable tool for assessing the validity of a study (Hadi & Closs, 2016). Validity is a show of integrity in applying the appropriate methods and the precision with which the research results reflect the data (Noble & Smith, 2015). Validity is a demonstration of the trustworthiness of the qualitative research and findings. The study's validity involves addressing the study findings' dependability, credibility, conformability, and transferability (Baillie, 2015).

To facilitate data validity and achieve dependability, Ndanu and Syombua (2015) proposed the use of data and methodological triangulation. A multiple-case-study approach allows for data triangulation (aligned with Marshall & Rossman, 2016). To establish validity in the data, I used multiple-cases to achieve data triangulation. I used the interview findings and review of project records, for methodological triangulation.

The creditability of the study creates acceptability in the research results (Moon et al., 2016). Member checking is a tool used by qualitative researchers to ensure analytical credibility (Simpson & Quigley, 2016). Comments from research participants provide a check for creditability of interpretation. Member checking involves equating participants' comments and validation of the transcribed data to ensure accurate interpretation of the participants' understandings (Birt et al., 2016), allowing for validation of the interpretation of the data (Simpson & Quigley, 2016). In addition, member checking

enhances the research results' dependability, consistency, and reputation (Gelling, 2015).

I arranged follow-up sessions with participants following transcription and interpretation

of the interview data to check for correctness. During the follow-up sessions, I shared the

transcribed data and the initial interpretation of the data with the participants for their

review, comments and validation. All the participants confirmed the data as a correct

representation of the interview responses.

Confirmability demonstrates the level and degree of neutrality in the research

findings confirming the impartiality of the study findings and mitigating the potential for

researcher bias or distortion of the data because of the researcher's personal motivation

(Moon et al., 2016). In qualitative studies, confirmability establishes trustworthiness by

establishing an audit trail of the analytical process (Gelling, 2015). Confirmability

demonstrates the research findings portraying participants' responses and not the

researcher's views. Korstjens and Moser (2018) recommended keeping an audit trail to

provide a clear description of the steps undertaken throughout the research process, from

development to reporting findings. As recommended by Korstjens and Moser (2018), I

provide details of the decisions made during the research process (i.e., research materials

adopted, any reflective thoughts, the data management and -analysis process, and the

reporting of findings). I also documented any adverse circumstances that could influence

the research findings. The audit trail enables other researchers to audit the research path.

Transferability is equivalent to confirming the external validity of the research findings (Marshall & Rossman, 2016), referring to the applicability of the study findings to other contexts (Moon et al., 2016). Other contexts include similar situations, populations, or similar phenomena to which the reader could apply the research processes and analyses and find similar results (Gelling, 2015). The specific aspects of the study lend to research transferability (Hadi & Closs, 2016). As a tool to measure the degree of transferability, I provide descriptive detail of the context and setting of the research, highlighting the participant's selection criteria. Additionally, I provide the interview procedure, and protocol, based on the research process. I also highlight the limitations, assumptions, and delimitations that provide tools to measure transferability.

Transition and Summary

This qualitative multiple case study aimed to understand the project-management strategies used by project managers to achieve project success. In Section 2, I described the outline and protocol of the study, including a justification for the selected research design and methodology. The subsections included the purpose statement, the role of the researcher, the selection of participants, the research method and design, the population and sampling, and facets of ethical research. In other subsections of Section 2, I described the data-collection instruments, data-collection techniques, data-organization techniques, data analysis, reliability, and validity.

In Section 3, I explain the findings of the study based on the data collection and analysis process described in Section 2. I also include the application of the study findings to business practices and contributions to social change in Section 3.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The objective of this qualitative multiple case study was to explore the strategies used by Zambian construction project managers to avoid infrastructure project failure. The targeted population was five project managers in Lusaka who have executed successful infrastructure projects. Following the semistructured interviews with the participants, I undertook member checking with the participants to ensure that I had a true reflection of their responses. Additionally, I confirmed data saturation when I noticed no new themes stemming from any new interviews.

I used Microsoft Word in the systematic tabulation of the manually coded themes. The interview data analysis revealed that the success of a project depends on a number of strategies employed by the project manager. Three major themes were identified from the participant interviews. The participants were coded as Participant 1 (P1) to Participant 5 (P5).

Presentation of the Findings

The overarching research question for this study was: How do Zambian construction project managers avoid construction-project failure? This study explored how project managers apply various strategies to avoid project failure using six predetermined interview questions.

Three major themes with subthemes emerged from the analysis of the data. The three themes were (a) effective project planning, execution, and closure; (b) effective communication; and (c) effective collaboration and coordination.

When discussing the strategies, the five participants identified the predominance of project planning for project execution and project closure as a critical strategy for a successful project. While the participants identified risk management as a critical aspect of project strategy, risk management was associated with project planning, execution, and closure, which stood out as an embedded theme. The identified themes and strategies align with the conceptual framework based on the contingency theory, which takes various approaches to adapt various strategies based on the context and environment to achieve a suitable contextual fit (Papke-Shields & Boyer-Wright, 2017).

The themes identified from the interviews were confirmed through review of the project records and documents provided by the participants. The project documents provided by the participants highlighted the strategies used by the participants to avoid project failure. The records were used for traceability of various activities undertaken prior to project implementation and during the course of the project, highlighting the key decisions made during the course of project.

The identified themes confirm the literature reviewed in this study that using conventional project management practices as prescribed does not guarantee project success (Badewi & Shehab, 2016).

Theme 1: Effective Project Planning, Execution, and Closure

The participants recognized the importance and necessity of practical project planning as a critical aspect of project success. P3 stated that project planning was a strategy most important for project success, confirming the findings in the existing body of literature, with Naeem et al. (2018) identifying project planning as critical to project success. Project planning as a strategy entails making a variety of decisions broadly classified as project representation, project scheduling, resource allocation, and risk analysis (Pellerin & Perrier, 2019). All the participants emphasized and identified project planning as a strategy worth taking seriously to avoid project failure. P5 stated that "a project manager should effectively plan all the aspects and processes of the project if it is to succeed." According to the participants, planning as a strategy involves planning for the project at two distinct levels, planning for the strategic management of the project and planning for the day-to-day management of the project. P1 stated that

"when assigned a project, the first thing I do is develop a strategic level project plan highlighting how I will strategically engage all the key stakeholders. The plan also highlights the proper sequencing of the key strategic level activities, resources sequencing, and activities execution. … Once I plan very well at this stage, then the day-to-day activity plans become easy".

The participants indicated that planning for the project at a strategic level and planning for the tactical aspects increased their chances of implementing the projects

successfully. P5 stated that "I spend a significant part of the project initiation in planning all the processes knowing too well that if my plan is good, I have laid a good foundation for my success in execution and closure." Accordingly, Zwikael et al. (2014) identified effective project planning as a core element of project success.

Based on the responses from the participants, I identified three subthemes of the project planning strategy: (a) team identification and building, (b) scheduling, (c) and risk analysis. Pellerin and Perrier (2019) classified these subthemes as leading to decisions to be made during project planning and execution to achieve certain milestones, which in some cases leads to project delays.

Project Team Identification and Building

All the participants identified the need to identify and select an appropriate team of personnel with critical and varied skillsets. Durmic (2020) recognized the need for project leaders to select their project team members based on their skills and the experience gained to leverage their strengths when executing the project. P2 remarked that he would identify the members to work with when first assigned to a project. P3 stated that "any project manager wants to have competent and hardworking team members able to work harmoniously." This finding resonates with Durmic, who posited that project leaders require a team to build good relationships while working collaboratively. P1 stated, "when I have a team of difficult people working with me, it

becomes difficult to achieve the project objectives. Team identification is critical for success".

P4 stated, "If I have to accomplish the Project task, I need a strong project team." The literature confirms the need for a competent and collaborative project team for project success. According to Rogers (2019), selecting key project personnel and working relationships within and among team members impact project success. Given the nature of construction projects, project managers tend to encounter personality and interpersonal conflicts.

Scheduling

Three participants identified project scheduling as part of the project planning process. According to P3, project scheduling, when well done, ensures the smooth running of the project:

> As you plan for the project, as a project manager, there is a need to develop a schedule which is realistic and, to a large extent, accurate. A realistic schedule makes it easy for management and the project team to follow through and complete the project with a minimal hitch.

When you adhere to a project schedule, you can easily see if there are any risks or obstacles.

In developing the project schedule, all participants highlighted the need to identify the project's key performance indicators in the initial stages as part of the planning process. Participant 2 noted,

I ensure that before I start implementing the project, I identify the performance measures at the overall project level and for each team member. It helps track the progress of the project and the performance of each member. Performance ensures that I do not fail back on the overall project objectives.

Participant 4 stated, "if I do not define the performance measures at the project's planning stages, then I anticipate problems in project implementation, and it is likely to fail."

The process of identifying performance measures is supported in the literature by Martens and Vanhaucke (2019). They posited that scheduling project performance measures in the planning stages are critical for project success. Project managers are responsible for continuously assessing the progress of a project based on the identified performance measures and project's goals. Hidding and Nicholas (2017) identified the importance of identifying project performance measures before project implementation during the planning stages as a strategy for project success. Missing consistent, reliable, and objective performance matrices and project performance indicators at the planning stage posed a challenge for effectively monitoring and measuring project performance in the Construction Industry (Orgut et al., 2020). Using performance matrices, project

managers can effectively monitor, measure, and evaluate project performance during implementation and at the time of project closure. From the review of the project documents shared by the P1 and P3, among the information identified at the planning level and clearly highlighted were the performance measures. These formed the basis for measuring performance during project implementation

Risk Analysis

All the participants indicated risk as one of any project manager's concerns as it would lead to project failure if not well planned, managed, and mitigated. P1 noted,

I ensure that during the planning process, I do risk analysis. However, I have learned that no matter how much I plan for risks, if I do not manage and mitigate the risks as they appear during project execution, then the project is bound to fail.

P2 remarked, "risks always appear during project execution and it is my responsibility to reduce the impact on the project" The failure of project managers to manage and mitigate risks is one of the primary causes of project failures (Verner et al., 2014). Peculiar issues arise during construction project implementation because of the complex and varying stakeholders (Bao et al., 2018), resulting in risks arising during the project implementation phase that require mitigating.

All the participants acknowledge the need for a risk management plan and the need to identify and employ strategies for identifying and mitigating potential risks. P2 stated that "I use different strategies to identify risks depending on the project I am

managing and the project sponsors and financiers. Experience from past projects plays a critical role in identifying the risks, though in some cases new risks can be difficult to identify despite the amount of experience one has." According to Rahman and Adnan (2020), while literature provides various tools, worksheets, and lists for risk identification and analysis, several risks tend to be unique and not easily identifiable.

Risk analysis and management are significant in project success strategies (Rahman & Adnan, 2022). Though risk analysis is considered critical for project success, not all project managers undertake risk analysis before implementing a project (Mishra & Mallik, 2017). Participant 5 confirmed, "depending on the project I manage, I do not undertake risk planning before implementation. However, over time I have learned the importance of planning for risks prior to project implementation." Nawaz et al. (2019) found a high correction between practical risk identification analysis and management and project success.

Theme 2: Effective Communication

All the participants identified communication as one critical strategy they used to ensure project success. From the responses, I classified the communication strategy into the following subthemes: (a) stakeholder engagement, (b) top-management engagement, and (c) project team engagement.

Literature confirms effective communication as a critical strategy for project success According to PMI (2021), a project manager spends about 75%–90% of the time

communicating formally or informally. Safapour et al. (2019) noted that project managers in the construction industry deal with many stakeholders with varying interests that require effective communication for project success. P3 noted that "I have to use different communication skills depending on which stakeholder I am dealing with. For some, it has to be instructive communication, while for others, it has to be negotiative communication." Aziz (2021) noted that the ability of the project manager to communicate effectively with the different project stakeholders impacts the success of the project.

All the project managers interviewed emphasized the need to keep all the team members and stakeholders informed throughout the project phase. P2 underscored the importance of communication by stating, "I deal with Government infrastructure projects with several stakeholders and varying interests. I ensure that I develop different communication channels, strategies, and tactics for each stakeholder. If I do not do this, the project will fail."

Effective communication as a critical strategy had three subthemes that came up (a) engagement of stakeholders, (b) involvement of top management, and (c) project team engagement. P4 noted, "To effectively communicate and engage with myriad and diverse stakeholders in a project, I must remain proactive." When a project manager is proactive, they address problems before they occur (Meng, 2020). Proactivity in project communication entails engaging all the stakeholders at each stage of the project cycle to

ensure continuous communication. A lack of effective communication inhibits project

progress (Aziz, 2021). Three of the participants identified the need for a clear

communication plan unique to the needs of the different stakeholders, which resonates

with the conceptual framework based on the contingency theory. As a strategy,

communication includes the various functional levels of stakeholders with unique and

specified content in line with the varying levels of the stakeholders with a clear plan

supporting the different stakeholders' requirements (Olkiewicz, 2018; Safapour, 2019).

Engagement of Stakeholders

All the participants noted that the construction projects involve various

participants and stakeholders with diverse interests and opinions, all interested in

achieving project success. Among the strategic stakeholders identified by the participants

includes project owners or sponsors, consultants, financiers, contractors, suppliers, and

the community as the project users. The participants acknowledged the need to

communicate effectively with each of these stakeholders. Stakeholders are individuals or

groups of individuals affected or interested in a particular project or service (Voropaey et

al., 2016). P1 and P3 indicated that "they make it part of their plan to involve the

stakeholders to avoid disruption in project implementation."

P5 indicated, "I make it a point to identify all the stakeholders likely to disrupt

progress, and I engage them as frequently." All the participants noted that one of the

reasons for project failure as project scope creep. P1 noted, "To avoid disruptive scope

creep, I ensure that I engage the project sponsors throughout the project implementation stages."

The need for the engagement of stakeholders as an effective strategy for successful projects is confirmed in the existing literature. Wu et al. (2017) noted the need for effective stakeholder communication and engagement to create shared values on the project and ensure project success. According to Alvarenga et al. (2020), the project is likely to experience time and cost overruns without strategic direction and objective-related communication with key stakeholders. P3 shared how a project's performance was affected by lack of effective communication by stating that "while implementing one critical project, I ignored to engage one critical stakeholder, and this led to the stakeholder raising litigations and concerns on the project which led to disruptions and delays on the project."

All the participants affirmed that the need for stakeholder engagement and management is to ensure project support from the stakeholder from inception so that the construction activities are not disrupted and remain issue-driven rather than personality-driven. Mok et al. (2018) remarked that, given the size of most infrastructure construction projects, there is a need for increased stakeholder involvement to guard against conflicting interests affecting the project performance.

Top Management Engagement

All five participants emphasized the need for involvement and support of top management. I therefore identified as a subtheme top management engagement. The subtheme resonates with the existing literature on Project Management. Young et al. (2013) noted the need for excellent top management support in achieving project success.

Top management is considered a crucial stakeholder that can make or break the project's success by all the participants. P1 noted, "I ensure to involve the top management during the planning and design stages and the project implementation stages to ensure their support and trust."

To ensure project success, all the participants indicated the need for top management to be aware of the progress, challenges, and risks at each stage of the project cycle. P3 indicated the need for a clear line of communication between the top management and project leadership to provide clear responses to changes, project controls, and problems that may arise during project implementation directly from the organization's top management. P1 shared a similar perspective indicating the need for a clear communication channel from top management to the project team and from the project team to top management without room for ambiguity. This assertion is supported through literature as posited by Yap et al. (2017), stating that clear directional communication strategies in construction increase performance by adapting to changes by the project teams and top management.

According to P1, enlisting top management support is a strategy that project managers need to avoid project failure. All the participants acknowledge the need for top management support in providing strategic guidance, authority, finances, and the requisite resources to ensure support. While there is an emphasis in the literature on the need for top management support for successful project implementation (Gemino et al., 2021; Rasool et al., 2022; Wang et al., 2021;), no textbook or project management tools provide authoritative guidance on soliciting top management support. In line with the contingency theoretical framework, to be successful, a project manager is expected to develop communication strategies with top management towards enlisting top management support for the project's success.

Project Team Engagement

The project participants emphasized effective and clear communication among the project team members. P5 emphasized that prior to implementing the project, they ensured clear communication channels among the project team members stating that "a communication gap among the project team members frequently results in project failure if not addressed at the early stages of the project." Hasan (2018) identified a lack of clear communication among project team members as a significant contributor to project failure. Project team communication as a strategy requires that the project manager identify the team members' unique characteristics and composition and identify unique

communication approaches to suit the project characteristics. P2 emphasized the need for a clear communication plan for the project team for the project period.

Greenberger (2016) noted the importance of effective project team communication strategies in preventing project delays and cost overruns, resulting in project failure. "A lack of effective communication among the project team members often results in conflicts and poor relationships, which negatively impacts project performance," indicated P4. Ali et al. (2021) emphasized the need for employee and project team engagement in enhancing project performance and the vital role that the project manager plays in strengthening staff and team member engagement through effective communication.

Theme 3: Effective Collaboration and Coordination

Like effective communication, all the participants identified effective collaboration as a strategic theme for project success. All the five participants agreed that to avoid project failure, and there is a need for close collaboration among the various stakeholders both within the organization and outside the project institutions. Construction project managers work in an interactive environment within the organization's various functional departments and outside the organization's functioning, yet with critical impact and influence on the success of the project. Shaqrah (2018) posited that organizations implement strategies to support project objectives through effective collaborative alliances and relationships across functional levels within the

organization and with key stakeholders outside the organization that influence the success of the organizational goals.

The participants acknowledge the need to create collaborative alliances within and outside the organization's functioning to deliver successful projects effectively and efficiently. According to Bianchi et al. (2017) and Shaqrah (2018), collaboration relates to effectively developing working relations to achieve shared values, goals, and purpose. Collaborative relationships can be long-lasting or short-term, formalized or ad-hoc in nature.

According to P2, the ability to effectively collaborate with various stakeholders outside the organization, including public institutions and beneficiary communities, is critical as a strategy for the success of construction projects. Literature confirms the need for effective collaborative relationships. Thapa et al. (2018) emphasized the need for pro-active consultation, coordination, and collaboration with various government institutions and other organizations to avoid unnecessary duplications of efforts and avoid unnecessary delays that may result from procedural activities impacting the successful implementation of projects. According to Sha (2016) and Wu et al. (2018), construction projects are embedded in inter-organizational settings, involving more than one organization with an interplay among various organizations and systems, underpinning the need for a strategy for effective collaborations.

According to the contingency conceptual framework outlined in this study, there is no one-size-fits-all approach for effective collaboration and coordination. All the participants acknowledged that the best strategic fit for collaboration depended on what worked for the project manager, given the environment in which they were operating. All the project managers emphasized the need to identify and develop specific strategies for effective collaboration. P4 indicated that throughout his life as a project, he had to use varying strategies to solicit and develop collaborative relationships depending on his perception of the nature of the collaboration, the institution, and the individuals involved. This finding resonates with the literature on contingency project management advocating for the development of specific project management strategies based on the environment and context of the project (Andersen, 2016; Eriksson et al., 2017; Zhu & Mostafavi, 2017).

Applications to Professional Practice

The intent of this qualitative multiple case study was to explore the strategies used by Zambia construction project managers to avoid infrastructure project failure. The construction industry has always played a critical role in countries' economic and social development as a critical driver of the economy. In Zambia, the construction industry contributed 10.3% to the overall GDP in 2017 (Central Statistics Office, 2018). Globally, the construction industry has continued to grow steadily despite the decline in the global economy (Saeedi & Karim, 2022). Despite the vital role construction projects play in

economic and social development, construction project delays and failure continue to be the norm (Saeedi & Karim, 2022). Aranyossy et al. (2018) posited that large and complex projects have a failure rate of 40%. Project failure has continued to be of a growing concern for the project clients, project managers, and other project stakeholders as it negatively impacts the profitability of the construction companies.

The construction industry faces unique commercial and operational challenges with evolving expectations for project delivery and growing complexities, requiring construction managers to consider and identify optimal value approaches for project delivery (Chen et al., 2022). Various project stakeholders may use this study's findings as they may positively impact the strategies and practices adopted by project managers in the construction industry to avoid project failure, given the dynamic nature and environment of the construction projects. The project sponsors or clients with the highest level of interest and influence and the most negatively affected should a project fail may apply the findings in practice by proactively engaging the project managers and ensuring high levels of communication between the client and the project manager. The findings of this study emphasize the need for communication with each stakeholder at each stage of the project as a strategy to avoid failure. The project's sponsors may apply the findings of this study by engaging the project manager to ensure consistent and effective communication channels. The client also needs to provide top management support and leadership to the project manager.

The study's findings provide strategies and practices successfully adopted by practicing project managers to avoid project failure. With the findings and the recommendations from this study, project managers in the construction industry may better understand the complexities of construction projects and the need to adopt various strategies and practices to avoid project failure. The study's findings help project managers appreciate the need to adopt other strategies while applying the traditional project management concepts and tools. The project managers can use the study results to identify and implement strategies and practices most suitable for avoiding project failure given the project's context, complexity, and environment. In practice, the project managers may use the study's findings by identifying the uniqueness of the project and adopting appropriate strategies and practices to ensure success.

For the academic community, the study's findings provide some fresh insights into the understanding of project management strategies and practices and include them in the design of the curriculum. The project management institutions and associations may use the findings of this study in further revisions and development of project management standards and tools as they develop policies for practitioners.

Implications for Social Change

Infrastructure plays a significant role in the social-economic development of societies. Efficient construction projects provide a solid platform for reviving the economy and building a more socially balanced economy. The literature has well

documented the importance of good-quality infrastructure in determining the course of industrial transformation and social-economic development. Infrastructure projects have a significant impact on the daily lives of societies. For example, the boreholes where societies get their water, the sanitation facilities, and the buildings where communities live and work are infrastructure projects with social impact. Further, the transport infrastructures such as roads and bridges, railways, airports, ferries, utility distribution systems, dams, and power lines are all infrastructure projects that positively impact the well-being of societies. The performance of the construction projects impacts societies, and, therefore, the success or failure of the infrastructure projects has implications for social change.

The impact of infrastructure on social, economic growth, and poverty reduction is not disputable (Zamojska & Próchniak, 2017). By using more effective strategies to improve project performance and increase profitability, the beneficence of infrastructure is likely to be enhanced. More social and economic infrastructure is likely to be provided effectively, benefiting communities, citizens, and families. Additionally, with higher project success rates in public projects comes an increased likelihood of increased economic growth and poverty reduction through reduced costs of providing public infrastructure and services with a concomitant increase in social amenities. With increased economic development comes more significant social change.

Infrastructure projects are in communities, so another noteworthy contribution to social change is the engagement and involvement of the communities in which the projects areas. The projects positively impact the communities in the project areas by providing employment opportunities for the host communities resulting in social benefits. The projects, when successfully implemented, provide economic benefits to the individuals in the communities within the project location and neighboring communities.

Recommendations for Action

The findings of this study may assist construction project managers in understanding the contextual ad environmental complexities associated with infrastructure projects and the need to adopt various strategies for managing infrastructure projects to avoid project failure. Based on the study results, I recommend that current and future construction project managers should continuously develop comprehensive project plans before commencing any construction projects. The plans should highlight all the project requirements, risks, and possible risk mitigation measures at each stage of the project cycle, from conception through execution and right up to project closure.

I also recommend developing an all-inclusive extensive communication plan considering the different communication needs of the various project stakeholders to determine the flow of information throughout the project cycle. Construction project

managers need to invest in strengthened collaborative relationships with the various stakeholders within and outside the organization.

The results of this study may benefit project managers and organizational leaders because they can use the strategies provided by the participants from their experiences to implement construction projects successfully. I will share the study results with the Zambian Project Management Association for review and further exploration and use by the association members. I will also publish the study through Walden University.

Recommendations for Further Research

This study focused on exploring the project management strategies that project managers in the construction industry use to avoid project failure. The participants were limited to five project managers operating in Lusaka, Zambia. One of the study's limitations was the size of participants and the limiting it to Zambian project managers implementing infrastructure projects in the construction sector. These limitations entail limited transferability.

I purposefully selected a sample of construction project managers that have undertaken public projects with limited project documents made available for data analysis of successful strategies to deliver successful projects. Researchers may conduct research with expanded participants, including projects in other sectors such as Information Technology and those implementing projects in the private sector.

I recommend conducting research that expands to foreign project managers implementing projects in Zambia. Expanding the participants to include foreign project managers may bring out the cultural perspective of strategies and the extent to which culture impacts the selection of strategies. Future research could also focus on other regions beyond the geographical boundaries of this study to understand the extent to which the geographical location of the projects impacts the selection of strategies to avoid project failure.

Reflections

As I reflect on my journey to undertaking this study, I wish someone had given me some insights into the trip I was about to embark on. Although the coursework for my doctoral degree served as a strong foundation for the journey, the dissertation phase presented challenges and fears of its own. I often felt I was in the dark and would be lucky to hit the target. As I look at the personal experiences of the dissertation journey, I am quick to acknowledge that I had some struggles that I endured and some moments of relief or "aha moments" that I enjoyed during the process.

As I thought through the different options for the research problem, I realized that developing a research topic is primarily influenced by life's experiences and is usually a personal choice unfolding over time. It was during the coursework that I started framing my research problem. As a public employee working in a developing country, I have always been interested in understanding why there are so many failed projects.

Understanding how much the government was investing in providing critical

infrastructure. However, most of these projects did not yield the intended objectives, did

not finish on time or within budget, and sometimes the quality was poor. I decided to

explore the strategies that project managers use to improve project performance.

When I was deciding on the research problem, I had completed some of the

required doctoral coursework. I then started incorporating the subject into my

assignments for the remaining part of the course work. Whenever possible, I used my

courses to explore related topics to gain background information on the problem. All the

annotated bibliographies were on the topic of my choice. Knowing that at some point, I

had to write a review of the literature in my dissertation proposal, I decided to start

researching the topic of project management strategies and the relevant conceptual

framework. Having developed a good literature base in the preliminary stages helped me

build a relatively strong dissertation proposal that needed a few changes. The biggest

challenge in the journey was my work which was also demanding. It was becoming

challenging to balance the development of the dissertation, work, and finding time for the

family. The dissertation process was now beginning to feel like a lone journey.

Although the dissertation phase felt like a lonely venture, it was the most

rewarding part of my doctoral study. Firstly, the research was consuming in terms of time

and energy. It taught me that when deciding on the topic, passion for the subject is critical

as it keeps you motivated. You have to be your best cheerleader. Secondly, deciding on

the research design and data analysis methodology at the initial stages help in quickening the research process. Thirdly, during the process, I had to leave class just after I had collected all the data and was in the process of analyzing the data. At this moment, I felt discouraged and thought of giving up. I learned from this experience that when you hit a roadblock, do not give up. Instead, look for ways to get around the challenge. Thirdly, the critical role of background research in any study. Look into all the related areas for insights. A solid literature base proves helpful in the long run and offers insights that enable one to work more proficiently and effectively. Lastly, use all the university's resources, including the Mentor and the dissertation committee. Each of them has its unique expertise.

During the dissertation journey, I learned and improved some skills. I strengthened my secondary research skills through the extensive literature review and the review of project documents as part of the data analysis process. I also learned to prioritize the secondary data as it is impossible to analyze all the data related to the research topic. In addition to secondary research skills, I acquired primary research skills through semistructured interviews. The dissertation process also allowed me to appreciate the advantages and disadvantages of the alternative primary data collection methods, including the various sampling options available to a researcher. Engaging in primary data collection analysis has strengthened my research and academic skills.

I greatly benefited from the experience during the research process by improving my time-management skills. The research process required extensive preparation, planning, and organization for each study stage. The process has also increased my self-confidence and communication skills.

Conclusion

This study provides literature on strategies construction project managers use to manage projects to avoid project failure. Despite developing project management tools and systems, projects continue to fail. The causes for failure are many; developed and developing nations and governments have lost considerable funds due to failed projects (Eja & Ramegowda, 2020). The findings from this qualitative multiple case study revealed that achieving project success requires adopting strategies beyond the adoption of the traditional project management tools, systems, and processes. The findings contribute toward knowledge through which Project Managers can rely on evidence-based information to enhance the strategic management of projects and attain increased efficiency and effectiveness in construction projects to ensure profitability and increased benefit to the local communities.

The participants in this study were construction project managers in Lusaka, Zambia, who shared strategies that they successfully used to avoid failure in construction projects. I used member checking and triangulation to help clarify and verify much of the data collected. The three major themes culminating from the study were The three themes

were (a) effective project planning, (b) effective communication, and (c) effective collaboration and coordination. I searched the relevant peer-reviewed literature that supported the themes. The study's findings support the use of non-conventional traditional tools and strategies to avoid project failure.

The study findings were consistent with the literature review and supported the contingency conceptual framework to use different strategies by considering the project's environment. A key recommendation for construction project managers is to develop clear plans encompassing comprehensive communication plans based on the project context and environment, bearing in mind the differences in project designs and operational environments. Despite the development of several project management tools and systems to assist project managers in managing projects for success, the study found that, in addition to using the prescribed and documented project management tools, techniques, and systems, project managers must understand the project environment and employ other strategies to manage projects for success.

References

Abdalla, M. M., Oliveira, L. G. L., Azevedo, C. E. F., & Gonzalez, R. K. (2018). Quality

in qualitative organizational research: Types of triangulation as a methodological

alternative. *Administração: Ensino e Pesquisa*, *19*(1), 66–98.

https://doi.org/10.13058/raep.2018.v19n1.578

Ahiaga-Dagbui, D. D., Love, P. E. D., Smith, S., & Ackermann, F. (2017). Toward a

systemic view to cost overrun causation in infrastructure projects: A review and

implications for research. *Project Management Journal, 48*(2), 88–98.

https://doi.org/10.1177/875697281704800207

Ahlemann, F., El Arbi, F., Kaiser, M. G., & Heck, A. (2013). A process framework for

theoretically grounded prescriptive research in the project management field.

International Journal of Project Management, *31*(1), 43–56.

https://doi.org/10.1016/j.ijproman.2012.03.008

Ahmed, R., & Anantatmula, V. S. (2017). Empirical study of project managers'

leadership competence and project performance. *Engineering Management

Journal*, *29*(3), 189–205. https://doi.org/10.1080/10429247.2017.1343005

Ahmed, R., Tahir, M., & Azmi bin Mohamad, N. (2013). Leadership is vital for project

managers to achieve project efficacy. *Research Journal of Recent Sciences, 2(6),*

99–102.

Ali, U., & Kidd, C. (2013). Critical success factors for configuration management

implementation. *Industrial Management & Data Systems*, *113*(2), 250–264. https://doi.org/10.1108/02635571311303569

Alias, Z., Zawawi, E. M. A., Yusof, K., & Aris, N. M. (2014). Determining critical success factors of project management practice: A conceptual framework. *Procedia—Social and Behavioral Sciences*, *153*, 61–69. https://doi.org/10.1016/j.sbspro.2014.10.041

Ali, M., Li, Z., Haider, M., Khan, S., & Din, Q. M. U. (2021). Does humility of project manager affect project success? Confirmation of moderated mediation mechanism. *Management Research Review*, *44*(9), 1320-1341. https://doi.org/10.1108/MRR-10-2020-0640

Almalki, S. (2016). Integrating quantitative and qualitative data in mixed methods research—Challenges and benefits. *Journal of Education and Learning*, *5*(3), 288–296. https://doi.org/10.5539/jel.v5n3p288

Alsudiri, T., Al-Karaghouli, W., & Eldabi, T. (2013). Alignment of large project management process to business strategy: A review and conceptual framework. *Journal of Enterprise Information Management*, *26*(5), 596–615. https://doi.org/10.1108/JEIM-07-2013-0050

Alvarenga, J. C., Branco, R. R., Guedes, A. L. A., Soares, C. A. P., & Silva, W. d. S. e. (2020), The project manager core competencies to project success. *International Journal of Managing Projects in Business*, *13*(2), 277-292.

https://doi.org/10.1108/IJMPB-12-2018-0274

Amade, B., Ubani, E. C., Amaeshi, U. F., & Okorocha, K. A. (2015). Factors for containing failure and abandonment of public sector construction projects in Nigeria. *Journal of Building Performance, 6*, 63–76.

Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: A worked example from a synthesis on parental perceptions of vaccination communication. *BMC Medical Research Methodology*, *19*(1), 1–9. https://doi.org/10.1186/s12874-019-0665-4

Anantatmula, V. S. (2015). Strategies for enhancing project performance. *Journal of Management in Engineering*, *31*(6), 04015013. https://doi.org/10.1061/(asce)me.1943-5479.0000369

Andersen, E. S. (2016). Do project managers have different perspectives on project management? *International Journal of Project Management*, *34*(1), 58–65. https://doi.org/101016/j.ijproman.2015.09.007

Aramburu, N., Sáenz, J., & Blanco, C. E. (2015). Structural capital, innovation capability, and company performance in technology-based Colombian firms. *Cuadernos de Gestión*, *15*(1), 39–60. https://doi.org/10.5295/cdg.130427na

Aranyossy, M., Blaskovics, B., & Horváth, Á. A. (2018). How universal are IT project success and failure factors? Evidence from Hungary. *Information Systems Management*, *35*(1), 15–28. https://doi.org/10.1080/10580530.2017.1416943

Arena, M. J., & Uhl-Bien, M. (2016). Complexity leadership theory: Shifting from

    human capital to social capital. *People & Strategy, 39*(2), 22–27.

Arifin, S. R. M. (2018). Ethical considerations in qualitative study. *International Journal*

    of Care Scholars, *1*(2), 30–33. https://doi.org/10.31436/ijcs.v1i2.82

Artto, K., Ahola, T., & Vartiainen, V. (2016). From the front end of projects to the back

    end of operations: Managing projects for value creation throughout the system

    lifecycle. *International Journal of Project Management*, *3*(2), 258–270.

    https://doi.org/10.1016/j.ijproman.2015.05.003

Aziz, Z. A. (2021). The influence of communication on project success: A survey of the

    SANRAL Gauteng e-tolling project in South Africa. *Communicare: Journal for*

    Communication Sciences in Southern Africa, *40*(2), 101-128.

    https://hdl.handle.net/10520/ejc-comcare_v40_n2_a6

Babbie, E. (2015). *Observing ourselves: Essays in social research.* Waveland Press.

Badewi, A. (2016). The impact of project management (PM) and benefits management

    (BM) practices on project success: Towards developing a project benefits

    governance framework. *International Journal of Project Management*, *34*(4),

    761-778. https://doi.org/10.1016/j.ijproman.2015.05.005

Badewi, A., & Shehab, E. (2016). The impact of organizational project benefits

    management governance on ERP project success: Neo-institutional theory

    perspective. *International Journal of Project Management*, *34*(3), 412–428.

https://doi.org/10.1016/j.ijproman.2015.12.002

Baillie, L. (2015). Promoting and evaluating scientific rigour in qualitative research. *Nursing Standard, 29*(46), 36–42. https://doi.org/10.7748/ns.29.46.36.e8830

Ballesteros-Sánchez, L., Ortiz-Marcos, I., & Rodríguez-Rivero, R. (2019). The project managers' challenges in a projectification environment. *International Journal of Managing Projects in Business*, *12*(3), 522-544. https://doi.org/10.1108/IJMPB09-2018-0195

Baltacı, A., & Balcı, A. (2017). Complexity leadership: A theoretical perspective. *International Journal of Educational Leadership and Management*, *5*(1), 30–59. https://doi.org/10.17583/ijelm.2017.2435

Bao, F., Chan, P. C., Chen, C., & Darko, A. (2018). Review of public-private partnership literature from a project lifecycle perspective. *Journal of Infrastructure Systems, 24.* https://doi.org/10.1061/(ASCE)IS.1943-555X.0000424

Barratt, M. J., Ferris, J. A., & Lenton, S. (2015). Hidden populations, online purposive sampling, and external validity: Taking off the blindfold. *Field Methods, 27,* 3–21. https://doi.org/10.1177/1525822X14526838

Baškarada, S., & Koronios, A. (2018). A philosophical discussion of qualitative, quantitative, and mixed methods research in social science. *Qualitative Research Journal, 18,* 2–21. https://doi.org/10.1108/QRJ-D-17-00042

Bawa, P., & Watson, S. (2017). The chameleon characteristics: A phenomenological

study of instructional designer, faculty, and administrator perceptions of

collaborative instructional design environments. *Qualitative Report, 22,* 2334–

2355. https://doi.org/10.46743/2160-3715/2017.2915

Bell, R. Q. (2017). A reinterpretation of the direction of effects in studies of socialization.

In R. Zukauskiene (Ed.), *Interpersonal development* (pp. 93–107). Routledge.

Benia, L. R., Hauck-Filho, N., Dillenburg, M., & Stein, L. M. (2015). The NICHD

investigative interview protocol: A meta-analytic review. *Journal of Child Sexual*

Abuse, 24(3), 259–279. https://doi.org/10.1080/10538712.2015.1006749

Bernard, H. R. (2013). *Social research methods: Qualitative and quantitative approaches*

(2nd ed.). Sage.

Bernhardt, B. A., Roche, M. I., Perry, D. L., Scollon, S. R., Tomlinson, A. N., & Skinner,

D. (2015). Experiences with obtaining informed consent for genomic sequencing.

American Journal of Medical Genetics Part A, 167(11)*,* 2635–2646.

https://doi.org/10.1002/ajmg.a.37256

Berssaneti, F. T., & Carvalho, M. M. (2015). Identification of variables that impact

project success in Brazilian companies. *International Journal of Project*

Management, 33(3)*,* 638–649. https://doi.org/10.1016/j.ijproman.2014.07.002

Besner, C., & Hobbs, B. (2012). An empirical identification of project management

toolsets and a comparison among project types. *Project Management Journal,*

43(5), 24–46. https://doi.org/10.1002/pmj.21292

Bianchi, E. M. P. G., Quishida, A., & Foroni, P. G. (2017). Atuação do líder na gestão estratégica de pessoas: Reflexões, lacunas e oportunidades/ A leader's role in strategic people management: Reflections, gaps and opportunities. *Revista de Administração Contemporânea*, *21*(1), 41-61. https://doi.org/10.1590/1982-7849rac2017150280

Birchall, S. J., Murphy, M., & Milne, M. (2016). Mixed methods research: A comprehensive approach for study into the New Zealand Voluntary Carbon Market. *Qualitative Report, 21*(1), 1351–1365.

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13)*,* 1802–1811. https://doi.org/10.1177/1049732316654870

Bonaccio, S., O'Reilly, J., O'Sullivan, S. L., & Chiocchio, F. (2016). Nonverbal behavior and communication in the workplace: A review and an agenda for research. *Journal of Management, 42*(5)*,* 1044–1074. https://doi.org/10.1177/0149206315621146

Bradbury-Jones, C., Breckenridge, J., Clark, M. T., Herber, O. R., Wagstaff, C., & Taylor, J. (2017). The state of qualitative research in health and social science literature: A focused mapping review and synthesis. *International Journal of Social Research Methodology, 20*(6)*,* 627–645. https://doi.org/10.1080/13645579.2016.1270583

Brady, T., & Davies, A. (2014). Managing structural and dynamic complexity: A tale of

    two projects. *Project Management Journal, 45*(5)*,* 21–38.

    https://doi.org/10.1001/pmy.21434

Brahm, F., & Tarziján, J. (2015). Does complexity and prior interactions affect project

    procurement? Evidence from mining mega-projects. *International Journal of*

    Project Management, 33(8)*,* 1851–1862.

    https://doi.org/10.1016/j.ijproman.2015.08.005

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In P.

    Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp.

    843–860). Springer.

Bredillet, C., Tywoniak, S., & Dwivedula, R. (2015). What is a good project manager?

    An Aristotelian perspective. *International Journal of Project Management, 33*(2)*,*

    254–266. https://doi.org/10.1016/j.ijproman.2014.04.001

Brink, T. (2017). Managing uncertainty for sustainability of complex projects.

    International Journal of Managing Projects in Business, 10(2)*,* 315–329.

    https://doi.org/10.1108/IJMPB-06-2016-0055

Burger, M., Verster, B., & Zulch, B. (2015). The construction project manager in South

    Africa: Analysis of industry-specific knowledge. *Acta Structilia, 22*, 48–72.

Burke, C. M., & Morley, M. J. (2016). On temporary organizations: A review, synthesis

    and research agenda. *Human Relations, 69*(6)*,* 1235–1258.

https://doi.org/10.1177/0018726715610809

Burns, T., & Stalker, G. M. (1961). *The management of innovation*. Tavistock.

Buys, C. M., & Shaw, P. L. (2015). Data management practices across an institution:
Survey and report. *Journal of Librarianship & Scholarly Communication*, *3*(2)
https://doi.org/10.7710/2162-3309.1225

Campbell, S. (2014). What is qualitative research? *Clinical Laboratory Science, 27*(1)*,* 3.
https://doi.org/10.29074/ascls.27.1.3

Canonico, P., & Söderlund, J. (2010). Getting control of multi-project organizations:
combining contingent control mechanisms. *International Journal of Project
Management, 28*(8)*,* 796–806. https://doi.org/10.1016/j.ijproman.2010.05.005

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use
of triangulation in qualitative research. *Oncology Nursing Forum, 41*(5)*,* 545–
547. https://doi.org/10.1188/14.ONF.545-547

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol
refinement framework. *Qualitative Report, 21,* 811–831.
https://doi.org/10.46743/2160-3715/2016.2337

Central Statistics Office. (2018). *The Statistician*, 7. Zambia

Chen, T., Fu, M., Liu, R., Xu, X., Zhou, S., & Liu, B. (2019). How do project
management competencies change within the project management career model
in large Chinese construction companies? *International Journal of Project*

Management, *37*(3), 485-500. https://doi.org/10.1016/j.ijproman.2018.12.002

Chen, W. T., Merrett, H. C., Liu, S. S., Fauzia, N., & Liem, F. N. (2022). A Decade of
Value Engineering in Construction Projects. *Advances in Civil Engineering*, *2022*.
https://doi.org/10.1155/2022/2324277

Chenhall, R. H. (2003). Management control systems design within its organizational
context: Findings from contingency-based research and directions for the future.
Accounting, Organizations and Society, 28(2), 127–168.
https://doi.org/10.1016/S0361-3682(01)00027-7

Cho, N. M., Ajagbe, M. A., Okoye, L. U., & Udo Udo, E. E. (2016). Entrepreneurial
leadership styles and organisational productivity of financial sector in Cameroon.
International Journal of Research in Commerce, IT & Management, 6, 64–70.

Clandinin, D. J., Cave, M. T., & Berendonk, C. (2016). Narrative inquiry: A relational
research methodology for medical education. *Medical Education, 51*(1)*,* 89–96.
https://doi.org/10.1111/medu.13136

Cserháti, G., & Szabó, L. (2014). The relationship between success criteria and success
factors in organizational event projects. *International Journal of Project
Management, 32*(4), 613–624. https://doi.org/10.1016/j.ijproman.2013.08.008

Cypress, B. S. (2017). Rigor or reliability and validity in qualitative research:
Perspectives, strategies, reconceptualization, and recommendations. *Dimensions
of Critical Care Nursing, 36*(4)*,* 253–263.

https://doi.org/10.1097/DCC.0000000000000253

Dao, B., Kermanshachi, S., Shane, J., Anderson, S., & Hare, E. (2017). Exploring and

    assessing project complexity. *Journal of Construction Engineering and*

    Management, 143(5). https://doi.org/10.1061/(ASCE)CO.1943-7862.0001275

Davis, K. (2014). Different stakeholder groups and their perceptions of project success.

    International Journal of Project Management, 32(2), 189–201.

    https://doi.org/10.1016/j.ijproman.2013.02.006

de Carvalho, M. M., Patah, L. A., & de Souza Bido, D. (2015). Project management and

    its effects on project success: Cross-country and cross-industry comparisons.

    International Journal of Project Management, 33(7), 1509–1522.

    https://doi.org/10.1016/j.ijproman.2015.04.004

Deng, F., & Smyth, H. (2013). Contingency-based approach to firm performance in

    construction: Critical review of empirical research. *Journal of Construction*

    Engineering and Management, 139(10).

    https://doi.org/10.1061/(ASCE)CO.19437862.0000738

Dikko, M. (2016). Establishing construct validity and reliability: Pilot testing of a

    qualitative interview for research in takaful (Islamic Insurance). *Qualitative*

    Report, 21, 521–528. https://doi.org/10.46743/21603715/2016.2243 Doolan, D.

    M., Winters, J., & Nouredini, S. (2017). Answering research questions using an

    existing data set. *Medical Research Archives*, *5*(9) 1-14.

https://esmed.org/MRA/mra/article/view/1543

Drake, S. A., & Yu, E. T. (2016). Using biomedical ethics model to explore use of 134

postmortem specimens in tissue research. *Open Medicine Journal, 3*(1), 234–237.

https://doi.org/10.2174/1874220301603010234

Drouin, N., & Jugdev, K. (2013). Standing on the shoulders of strategic management

giants to advance organizational project management. *International Journal of*

Managing Projects in Business, 7(1), 61–77.

https://doi.org/10.1108/IJMPB-04-2013-0021

DuBois, M., Hanlon, J., Koch, J., Nyatuga, B., & Kerr, N. (2015). Leadership styles of

effective project managers: Techniques and traits to lead high performance teams.

Journal of Economic Development, Management, IT, Finance, and Marketing,

7(1), 30–46.

Duffield, S., & Whitty, S. J. (2015). Developing a systemic lessons learned model for

organizational learning through projects. *International Journal of Project*

Management, 33(3)*,* 311–324. https://doi.org/10.1016/j.ijproman.2014.07.004

Durmic, N. (2020). Factors Influencing Project Success: A Qualitative Research. *TEM*

Journal, 9, 1011-1020. https://doi.org/10.18421/TEM93-24

Eja, K. M., & Ramegowda, M. (2020). Government project failure in developing

countries: a review with particular reference to Nigeria. Global Journal of Social

Sciences, 19, 35-47. https://doi.org/10.4314/gjss.v19i1.4

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014).

    Qualitative content analysis: A focus on trustworthiness. *SAGE Open, 4*(1).

    https://doi.org/10.1177/2158244014522633

Eriksson, P. E., Larsson, J., & Pesämaa, O. (2017). Managing complex projects in the

    infrastructure sector—A structural equation model for flexibility-focused project

    management. *International Journal of Project Management, 35*(8)*,* 1512–1523.

    https://doi.org/10.1016/j.ijproman.2017.08.015

Eriksson, P. E., Patel, P. C., Sjödin, D. R., Frishammar, J., & Parida, V. (2016).

    Managing interorganizational innovation projects: Mitigating the negative effects

    of equivocality through knowledge search strategies. *Long Range Planning,*

    49(6)*,* 691–705. https://doi.org/10.1016/j.lrp.2016.05.006

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling

    and purposive sampling. *American Journal of Theoretical and Applied Statistics,*

    5(1), 1-4. https://doi.org/10.11648/j.ajtas.20160501.11

Fiedler, F. E. (1967). *A theory of leadership effectiveness.* McGraw-Hill.

Finlay, K. A., & Elander, J. (2016). Reflecting the transition from pain management

    services to chronic pain support group attendance: An interpretative

    phenomenological analysis. *British Journal of Health Psychology, 21*(3)*,* 660–

    676. https://doi.org/10.1111/bjhp.12194

Fleming, J., & Zegwaard, K. E. (2018). Methodologies, Methods and Ethical

Considerations for Conducting Research in Work-Integrated Learning.

International Journal of Work-Integrated Learning, Special Issue, 19, 205-213.

https://eric.ed.gov/?id=EJ1196755

Floricel, S., Michela, J. L., & Piperca, S. (2016). Complexity, uncertainty-reduction

strategies, and project performance. *International Journal of Project*

Management, 34(7)*,* 1360–1383. https://doi.org/10.1016/j.ijproman.2015.11.007

Floricel, S., Piperca, S., & Tee, R. (2018). Strategies for managing the structural and

dynamic consequences of project complexity. *Complexity, 2018,* 1-17.

https://doi.org/10.1155/2018/3190251

Franz, B., Leicht, R., Molenaar, K., & Messner, J. (2016). Impact of team integration and

group cohesion on project delivery performance. *Journal of Construction*

Engineering and Management, 143(1)*,* 1–12.

https://doi.org/10.1061/(ASCE)CO.1943-7862.0001219

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative

research. *Qualitative Report, 20,* 1408–1416.

https://doi.org/10.46743/2160-3715/2015.2281

Gelling, L. (2015). Qualitative research. *Nursing Standard, 29*(30)*,* 43–47.

https://doi.org/10.7748/ns.29.30.43.e9749

Gemino, A., Horner Reich, B., & Serrador, P. M. (2021). Agile, traditional, and hybrid

approaches to project success: is hybrid a poor second choice? *Project*

Management Journal, *52*(2), 161-175.https://doi.org/10.1177/8756972820973082

Gentles, S. J., Charles, C., Ploeg, J., & McKibbon, K. (2015). Sampling in qualitative

research: Insights from an overview of the methods literature. *Qualitative Report,*

20, 1772–1789. https://doi.org/10.46743/2160-3715/2015.2373

Ghosh, S., Forrest, D., DiNetta, T., Wolfe, B., & Lambert, D. C. (2012). Enhance

PMBOK® by comparing it with P2M, ICB, PRINCE2, APM and Scrum project

management standards. *PM World Today, 14*(1), 1-77.

Gibson, C. B. (2017). Elaboration, generalization, triangulation, and interpretation: On

enhancing the value of mixed method research. *Organizational Research*

Methods, 20(2)*,* 193–223. https://doi.org/10.1177/1094428116639133

Grady, C. (2015). Enduring and emerging challenges of informed consent. *New England*

Journal of Medicine, 372(9)*,* 855–862. https://doi.org/10.1056/NEJMra1411250

Greenberger, L. S. (2016). Effective communications for project success. Remediation

Journal, 26(2), 121-128. https://doi.org/10.1002/rem.21463

Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and

qualitative results in health science mixed methods research through joint

displays. *Annals of Family Medicine, 13*(6)*,* 554–561.

https://doi.org/10.1370/afm.1865

Gunawan, J. (2015). Ensuring trustworthiness in qualitative research. *Belitung Nursing*

Journal, 1(1), 10–11. https://doi.org/10.33546/bnj.4

Hadi, M. A., & Closs, S. J. (2016). Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *International Journal of Clinical Pharmacy, 38,* 641–646. https://doi.org/10.1007/s11096-015-0237-6

Hammersley, M. (2018). What is ethnography? Can it survive? Should it? *Ethnography and Education, 13*(1), 1–17. https://doi.org/10.1080/17457823.2017.1298458

Hancock, D. R., & Algozzine, B. (2016). *Doing case study research: A practical guide for beginning researchers* (3rd ed.). Teachers College Press.

Hanisch, B., & Wald, A. (2012). A bibliometric view on the use of contingency theory in project management research. *Project Management Journal, 43*(3), 4–23. https://doi.org/10.1002/pmj.21267

Harvey, L. (2015). Beyond member-checking: A dialogic approach to the research interview. *International Journal of Research & Method in Education, 38*(1), 23–38. https://doi.org/10.1080/1743727X.2014.914487

Hasan, A., Baroudi, B., Elmualim, A., & Rameezdeen, R. (2018). Factors affecting construction productivity: a 30 year systematic review. *Engineering, Construction and Architectural Management, 25*(7), 916-937. https://doi.org/10.1108/ECAM-02-2017-0035

Hemkens, L. G., Benchimol, E. I., Langan, S. M., Briel, M., Kasenda, B., Januel, J.-M., Herrett, E., & von Elm, E. (2016). The reporting of studies using routinely collected health data was often insufficient. *Journal of Clinical Epidemiology, 79,*

104-111. https://doi.org/10.1016/j.jclinepi.2016.06.005

Hermano, V., & Martín-Cruz, N. (2016). The role of top management involvement in firms performing projects: A dynamic capabilities approach. *Journal of Business Research, 69*(9)*,* 3447–3458. http://doi10.1016/j.jbusres.2016.01.041

Heydon, G., & Powell, A. (2018). Written-response interview protocols: An innovative approach to confidential reporting and victim interviewing in sexual assault investigations. *Policing and Society, 28*(6)*,* 631–646. https://doi.org/10.1080/10439463.2016.1187146

Hidding, G. J., & Nicholas, J. M. (2017). A new way of thinking about IT project management practices: Early empirical results. *Journal of Organizational Computing and Electronic Commerce, 27*(1), 81-95. https://doi.org/10.1080/10919392.2016.1263113

Hjelmbrekke, H., Hansen, G. K., & Lohne, J. (2015). A motherless child—Why do construction projects fail. *Procedia Economics and Finance, 21,* 72-79. https://doi.org/10.1016/S2212-5671(15)00152-5

Hofisi, C., Hofisi, M., & Mago, S. (2014). Critiquing interviewing as a data collection method. *Mediterranean Journal of Social Sciences, 5,* 60. https://doi.org/10.5901/mjss.2014.v5n16p60

Hossain, S., & Saleh, F. (2016). Role of leadership in performance excellence. *Global Journal of Business Management, 10*(1) 23–38.

Hussain, A., Fisher, D., & Espiner, S. (2017). Transport infrastructure and social

inclusion: A case study of tourism in the region of Gilgit-Baltistan. *Social*

Inclusion, 5(4), 196–208. https://doi.org/10.17645/si.v5i4.1084

Imangulova, Z., & Kolesnyk, L. (2016). An algorithm for building a project team

considering interpersonal relations of employees. *Eastern-European Journal of*

Enterprise Technologies, 6(3), 19–25.

https://doi.org/10.15587/1729-4061.2016.85222

Jacob, S. A., & Furgerson, S. P. (2012). Writing interview protocols and conducting

interviews: Tips for students new to the field of qualitative research. *The*

Qualitative Report, 17, 1-10. https://doi.org/10.46743/2160-3715/2012.1718

Jacobsson, M., Lundin, R. A., & Söderholm, A. (2016). Towards a multi-perspective

research program on projects and temporary organizations: Analyzing the

Scandinavian turn and the rethinking effort. *International Journal of Managing*

Projects in Business, 9(4), 752–766.

https://doi.org/10.1108/IJMPB-10-2015-0100

Jallow, A. K., Demian, P., Baldwin, A. N., & Anumba, C. (2014). An empirical study of

the complexity of requirements management in construction projects.

Engineering, Construction and Architectural Management, 21(5), 505–531.

https://doi.org/10.1108/ECAM-09- 2013-0084

Jerbrant, A., & Gustavsson, T. K. (2013). Managing project portfolios: Balancing

flexibility and structure by improvising. *International Journal of Managing*

   Projects in Business, 6(1)*,* 152–172. https://doi.org/10.1108/17538371311291071

Johnson, N., Creasy, T., & Fan, Y. (2016). Recent trends in theory use and application

   within the project management discipline. *Journal of Engineering, Project, and*

   Production Management, 6, 25. https://doi.org/10.32738/jeppm.201601.0004

Jong, Y. O., & Jung, C. K. (2015). The Development of interview techniques in language

   studies: Facilitating the researchers' views on interactive encounters. *English*

   Language Teaching, *8*(7), 30-39. https://doi.org/10.5539/elt.v8n7p30

Joslin, R., & Müller, R. (2015). Relationships between a project management

   methodology and project success in different project governance contexts.

   International Journal of Project Management, 33(6)*,* 1377–1392.

   https://doi.org/10.1016/j.ijproman.2015.03.005

Joslin, R., & Müller, R. (2016). The impact of project methodologies on project success

   in different project environments. *International Journal of Managing Projects in*

   Business, 9(2)*,* 364–388. https://doi.org/10.1108/IJMPB-03-2015-0025

Jugdev, K., Perkins, D., Fortune, J., White, D., & Walker, D. (2013). An exploratory

   study of project success with tools, software and methods. *International Journal*

   of Managing Projects in Business, 6(3)*,* 534–551.

   https://doi.org/10.1108/IJMPB-08-2012-0051

Kaiser, M. G., El Arbi, F., & Ahlemann, F. (2015). Successful project portfolio

management beyond project selection techniques: Understanding the role of
structural alignment. *International Journal of Project Management, 33*(1)*,* 126–
139. https://doi.org/10.1016/j.ijproman.2014.03.002

Kanten, P., Kanten, S., & Gurlek, M. (2015). The effects of organizational structures and
learning organization on job embeddedness and individual adaptive performance.
Procedia Economics and Finance, 23, 1358–1366. https://doi.org/10.1016/S2212-
5671(15)00523-7

Kauffman, S. A. (1993). *The origins of order: Self-organization and selection in
evolution*. Oxford University Press.

Kern, F. G. (2018). The trials and tribulations of applied triangulation: weighing different
data sources. *Journal of Mixed Methods Research, 12*(2), 166–181.
https://doi.org/10.1177/1558689816651032

Khamooshi, H., & Golafshani, H. (2014). EDM: Earned duration management, a new
approach to schedule performance management and measurement. *International
Journal of Project Management, 32*(6)*,* 1019–1041.
https://doi.org/10.1016/j.ijproman.2013.11.002

Khattak, M. S., Mustafa, U., & Shah, S. S. (2016). Mapping project management
competencies with different complexities for improving performance. *Journal of
Managerial Sciences, 10,* 205–217.

Klakegg, O. J., Williams, T., & Shiferaw, A. T. (2016). Taming the 'trolls': Major public

projects in the making. *International Journal of Project Management, 34*(2), 282–296. https://doi.org/10.1016/j.ijproman.2015.03.008

Klein, L. (2016). Towards a practice of systemic change—acknowledging social complexity in project management. *Systems Research and Behavioral Science, 33*(5), 651–661. https://doi.org/10.1002/sres.2428

Klein, L., Biesenthal, C., & Dehlin, E. (2015). Improvisation in project management: A praxeology. *International Journal of Project Management, 33*(2), 267–277. https://doi.org/10.1016/j.ijproman.2014.01.011

Kopmann, J., Kock, A., Killen, C. P., & Gemünden, H. G. (2017). The role of project portfolio management in fostering both deliberate and emergent strategy. *International Journal of Project Management, 35*(4), 557–570. https://doi.org/10.1016/j.ijproman.2017.02.011

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice, 24*(1), 120–124. https://doi.org/10.1080/13814788.2017.1375092

Kostalova, J., Tetrevova, L., & Patak, M. (2017). Project management methods in projects co-financed by EU funds. *Engineering Economics, 28*(3), 301–310. https://doi.org/10.5755/j01.ee.28.3.13651

Kotob, F., Styger, L. E. J., & Richardson, L. P. (2016). Exploring mind mapping techniques to analyse complex case study data. *Australian Academy of Business*

and Economics Review, 2(3)*,* 244–262. https://ro.uow.edu.au/buspapers/958/

Kristensen, G. K., & Ravn, M. N. (2015). The voices heard and the voices silenced: Recruitment processes in qualitative interview studies. *Qualitative Research, 15*(6)*,* 722–737. https://doi.org/10.1177/1468794114567496

Kujala, J., Brady, T., & Putila, J. (2014). Challenges of cost management in complex projects. *International Journal of Business and Management, 9*(11)*,* 48. https://doi.org/10.5539/ijbm.v9n11p48

Laufer, A., Hoffman, E. J., Russell, J. S., & Cameron, W. S. (2015). What successful project managers do. *IEEE Engineering Management Review, 43(2)*, 77–84. https://doi.org/10.1109/emr.2015.7123232

Leedy, P. D., & Ormrod, J. E. (2013). *Practical research: Planning and design* (10th ed.). Pearson.

Lenfle, S., & Loch, C. (2010). Lost roots: how project management came to emphasize control over flexibility and novelty. *California Management Review, 53*(1)*,* 32–55. https://doi.org/10.1525/cmr.2010.53.1.32

Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health Promotion Practice, 16*(4)*,* 473–475. https://doi.org/10.1177/1524839915580941

Ligthart, H. D., Oerlemans, L. A. G., & Noorderhaven, N. G. (2016). In the shadow of time: A case study of flexibility behaviors in an inter-organizational project.

Organizational Studies, 37(12)*,* 1721–1743.

https://doi.org/10.1177/0170840616655487

Lips-Wiersma, M., & Mills, A. J. (2014). Understanding the basic assumptions about human nature in workplace spirituality: Beyond the critical versus positive divide. *Journal of Management Inquiry, 23*(2)*,* 148–161.

https://doi.org/10.1177/1056492613501227

Lu, P., Guo, S., Qian, L., He, P., & Xu, X. (2015). The effectiveness of contractual and relational governances in construction projects in China. *International Journal of Project Management, 33*(1), 212–222.

https://doi.org/10.1016/j.ijproman.2014.03.004

Lundin, R. A., Arvidsson, N., Brady, T., Ekstedt, E., Midler, C., & Sydow, J. (2015). *Managing and working in project society: Institutional challenges of temporary organizations*. Cambridge University Press.

Lunnay, B., Borlagdan, J., McNaughton, D., & Ward, P. (2015). Ethical use of social media to facilitate qualitative research. *Qualitative Health Research, 25*(1), 99–109. https://doi.org/10.1177/1049732314549031

Makrakis, V., & Kostoulas-Makrakis, N. (2016). Bridging the qualitative–quantitative divide: Experiences from conducting a mixed methods evaluation in the RUCAS programme. *Evaluation and Program Planning, 54,* 144–151.

https://doi.org/10.1016/j.evalprogplan.2015.07.008

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative

    interview studies: Guided by information power. *Qualitative Health Research,*

    26(13)*,* 1753–1760. https://doi.org/10.1177/1049732315617444

Marshall, C., & Rossman, G. B. (2016). *Designing qualitative research* (6th ed.). Sage.

Martens, A., & Vanhoucke, M. (2019). The impact of applying effort to reduce activity

    variability on the project time and cost performance. European Journal of

    Operational Research, 277(2), 442-453. https://doi.org/10.1016/j.ejor.2019.03.020

Martinsuo, M. (2013). Project portfolio management in practice and in context.

    International Journal of Project Management, 31(6)*,* 794–803.

    https://doi.org/10.1016/j.ijproman.2012.10.013

Mayer, I. (2015). Qualitative research with a focus on qualitative data analysis.

    International Journal of Sales, Retailing & Marketing, 4, 53–67.

    https://www.circleinternational.co.uk/wp-content/uploads/2021/01/IJSRM4-9.

McAdam, R., Miller, K., & McSorley, C. (2016). Towards a contingency theory

    perspective of quality management in enabling strategic alignment. *International*

    Journal of Production Economics, 207, 195–209.

    https://doi.org/10.1016/j.ijpe.2016.07.003

McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed

    methods and choice based on the research. *Perfusion, 30*(7)*,* 537–542.

    https://doi.org/10.1177/0267659114559116

Melville, A., & Hincks, D. (2016). Conducting sensitive interviews: A review of

reflections. *Law and Method, 1*(1), 1–26. https://doi.org/10.5553/REM/.000015

Meng, X. (2020). Proactive management in the context of construction supply chains.

Production Planning & Control, 31(7), 527-539.

https://doi.org/10.1080/09537287.2019.1657977

Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review,

72*(1), 107–114.

http://hbr.org/1994/01/the-fall-and-rise-of-strategicplanning/ar/pr

Mir, F. A., & Pinnington, A. H. (2014). Exploring the value of project management:

Linking project management performance and project success. *International

Journal of Project Management, 32*(2)*, 202–217

https://doi.org/10.1016/j.ijproman.2013.05.012

Mishra, A. & Malik, K. (2017). Factors and Impact of Risk Management Practice on

Success of construction projects of Housing Developers, Kathmandu, Nepal.

Internal Journal of Science: Basic and Applied Research, 36(7), 206-232.

Miyamoto, K., & Chiofalo, E. (2015). Official development finance for infrastructure:

Support by multilateral and bilateral development partners. *Organisation for

Economic Co-operation and Development Working Papers, 25*.

https://doi.org/10.1787/5jrs3sbcrvzx-en

Mok, K. Y., Shen, G. Q., & Yang, R. (2018). Stakeholder complexity in large scale green

building projects. *Engineering, Construction and Architectural Management*, *25*(11), 1454-1474. https://doi.org/10.1108/ECAM-09-2016-0205

Moon, K., Brewer, T. D., Januchowski-Hartley, S. R., Adams, V. M., & Blackman, D. A. (2016). A guideline to improve qualitative social science publishing in ecology and conservation journals. *Ecology and Society, 21*(3)*,* 17. https://doi.org/10.5751/ES-0866-210317

Moore, C. B., Payne, G. T., Autry, C. W., & Griffis, S. E. (2018). Project complexity and bonding social capital in network organizations. *Group & Organization Management, 43*(6)*,* 936–970. https://doi.org/10.1177/1059601116650556

Moraes, R. & Laurindo, F. (2013). Maturity and Performance in Information Technology Project Management. *Journal of technology management & innovation. 8*. 3-4. https://doi.org/10.4067/S0718-27242013000300003

Morgan, D. L. (2015). From themes to hypotheses following up with quantitative methods. *Qualitative Health Research, 25*(6)*,* 789–793. https://doi.org/10.1177/1049732315580110

Morgan, G. (2007). *Images of organizations*. Sage.

Morse, A., & McEvoy, C. D. (2014). Qualitative research in sport management: Case study as a methodological approach. *Qualitative Report, 19,* 1–13. https://doi.org/10.46743/2160-3715/2014.1032

Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative

inquiry. *Qualitative Health Research, 25*(9)*,* 1212–1222.

https://doi.org/10.1177/1049732315588501

Morse, J. M., & Coulehan, J. (2015). Maintaining confidentiality in qualitative

publications. *Qualitative Health Research, 25*(2)*,* 151–152.

https://doi.org/10.1177/1049732314563489

Müller, R., & Jugdev, K. (2012). Critical success factors in projects: Pinto, Slevin, and

Prescott—The elucidation of project success. *International Journal of Managing*

Projects in Business, 5(4)*,* 757–775. https://doi.org/10.1108/17538371211269040

Müller, R., Turner, J. R., Andersen, E. S., Shao, J., & Kvalnes, Ø. (2016). Governance

and ethics in temporary organizations: the mediating role of corporate

governance. *Project Management Journal*, *47*(6), 7-23.

https://doi.org/10.1177/875697281604700602

Naeem, S., Khanzada, B., Mubashir, T., & Sohail, H. (2018). Impact of Project Planning

on Project Success with Mediating Role of Risk Management and Moderating

Role of Organizational Culture. *International Journal of Business and Social*

Science, 9(1), 88-98.

Nawaz, A., Waqar, A., Shah, S. A. R., Sajid, M., & Khalid, M. I. (2019). An innovative

framework for risk management in construction projects in developing countries:

evidence from Pakistan. *Risks, 7*(1), 24. https://doi.org/10.3390/risks7010024

Ndanu, M. C., & Syombua, M. J. (2015). Mixed methods research: The hidden cracks of

the triangulation. *General Education Journal, 4*(2).

Neale, J. (2016). Iterative categorization (IC): A systematic technique for analysing

qualitative data. *Addiction, 111*(6)*,* 1096–1106. https://doi.org/10.1111/add.13314

Neale, J. (2020). Iterative categorisation (IC)(part 2): interpreting qualitative data.

Addiction, 116(3), 668-676. https://doi.org/10.1111/add.15259

Nitschke, R. L. (2013). *Project failures are killing us.* Mapcarta.

Nixon, P., Harrington, M., & Parker, D. (2012). Leadership performance is significant to

project success or failure: a critical analysis. *International Journal of Productivity

and Performance Management, 61*(2)*,* 204–216.

https://doi.org/10.1108/17410401211194699

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research.

Evidence-Based Nursing, 18(2), 34-35. https://doi.org/10.1136/eb-2015-102054

O'Cathain, A., Hoddinott, P., Lewin, S., Thomas, K. J., Young, B., Adamson, J., Jansen,

Y. J., Mills, N., Moore, G., & Donovan, J. L. (2015). Maximising the impact of

qualitative research in feasibility studies for randomised controlled trials:

guidance for researchers. *Pilot and Feasibility Studies*, *1*(1).

https://doi.org/10.1186/s40814-015-0026-y

O'Keeffe, J., Buytaert, W., Mijic, A., Brozovic, N., & Sinha, R. (2016). The use of semi-

structured interviews for the characterisation of farmer irrigation practices.

Hydrology and Earth System Sciences, 20(5)*,* 1911–1924.

https://doi.org/10.5194/hess-20-1911-2016

O'Leary, Z. (2014). *The essential guide to doing your research project* (3rd ed.). Sage.

Olkiewicz, M. (2018). Quality improvement through foresight methodology as a

direction to increase the effectiveness of an organization. Contemporary

Economics, 12, 69-80. https://doi.org/10.5709/ce:1897-9254.264

Oltmann, S. M. (2016). Qualitative interviews: A methodological discussion of the

interviewer and respondent contexts. *Forum: Qualitative Social Research, 17,* 2.

https://doi.org/10.17169/fqs-17.2.2551

Onwuegbuzie, A. J., & Byers, V. T. (2014). An exemplar for combining the collection,

analysis, and interpretation of verbal and nonverbal data in qualitative research.

International Journal of Education, 6, 183–247.

https://doi.org/10.5296/ije.v6il.4399

Orgut, R. E., Batouli, M., Zhu, J., Mostafavi, A., & Jaselskis, E. J. (2020). Critical factors

for improving reliability of project control metrics throughout project life cycle.

Journal of Management in Engineering, *36*(1).

https://doi.org/10.1061/(ASCE)ME.1943-5479.0000710

O'Reilly, M., & Parker, N. (2013). "Unsatisfactory saturation": A critical exploration of

the notion of saturated sample sizes in qualitative research. *Qualitative Research,*

13(2)*,* 190–197. https://doi.org/10.1177/1468794112446106

Ose, S. O. (2016). Using excel and word to structure qualitative data. *Journal of Applied*

Social Science, 10(2)*,* 147–162. https://doi.org/10.1177/1936724416664948

Othman, Z., & Hamid, F. Z. A. (2018). Dealing with Un(expected) ethical dilemma:

Experience from the field. *Qualitative Report, 23,* 733–741.

https://doi.org/10.46743/2160-3715/2018.3050

Otley, D. T. (2016). The contingency theory of management accounting and control:

1980–2014. *Management Accounting Research, 31* 45–62.

https://doi.org/10.1016/j.mar.2016.02.001

Padalkar, M., & Gopinath, S. (2016). Six decades of project management research:

Thematic trends and future opportunities. *International Journal of Project*

Management, 34(7)*,* 1305–1321. https://doi.org/10.1016/j.ijproman.2016.06.006

Padgett, J., Gossett, K., Mayer, R., Chien, W. W., & Turner, F. (2017). Improving patient

safety through high reliability organizations. *Qualitative Report, 22,* 410–425.

https://doi.org/10.46743/2160-3715/2017.2547

Padilla-Díaz, M. (2015). Phenomenology in educational qualitative research: Philosophy

as science or philosophical science. *International Journal of Educational*

Excellence, 1(2), 101–110. 5. https://doi.org/10.18562/IJEE.2015.0009

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K.

(2015). Purposeful sampling for qualitative data collection and analysis in mixed

method implementation research. *Administration and Policy in Mental Health and*

Mental Health Services Research, 42(5)*,* 533–544.

https://doi.org/10.1007/s10488-013-0528-y

Pandya, K. D. (2014). The key competencies of project leader beyond the essential

technical capabilities. *IUP Journal of Knowledge Management, 12*(4), 39–48.

https://ssrn.com/abstract=2637233

Papke-Shields, K. E., & Boyer-Wright, K. M. (2017). Strategic planning characteristics

applied to project management. *International Journal of Project Management,*

35(2)*,* 169–179. https://doi.org/10.1016/j.ijproman.2016.10.015

Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. (2016).

Design: Selection of data collection methods. *Journal of Graduate Medical*

Education, 8(2)*,* 263–264. https://doi.org/10.4300/JGME-D-16-00098.1

Parker, D. W., Parsons, N., & Isharyanto, F. (2015). Inclusion of strategic management

theories to project management. *International Journal of Managing Projects in*

Business, 8(3)*,* 552–573. https://doi.org/10.1108/IJMPB-11-2014-0079

Patanakul, P. (2015). Key attributes of effectiveness in managing project portfolio.

International Journal of Project Management, 33(5)*,* 1084–1097.

https://doi.org/10.1016/j.ijproman.2015.01.004

Pathak, V., Jena, B., & Kalra, S. (2013). Qualitative research [Supplemental material].

Perspectives in Clinical Research, 4(3), 192. https://doi.org/10.4103/2229-

3485.115389

Patton, M. Q. (2015). *Qualitative evaluation and research methods* (4th ed.). Sage.

Pellerin, R., & Perrier, N. (2019). A review of methods, techniques and tools for project

   planning and control. *International Journal of Production Research, 57*(7), 2160-

   2178. https://doi.org/10.1080/00207543.2018.1524168

Peters, K., & Halcomb, E. (2015). Interviews in qualitative research. *Nurse Researcher*,

   22(4), 6-7. https://doi.org/10.7748/nr.22.4.6.s2

Pinto, J. K., & Winch, G. (2016). The unsettling of "settled science:" The past and future

   of the management of projects. *International Journal of Project Management,*

   34(2)*,* 237–245. https://doi.org/10.1016/j.ijproman.2015.07.011

Project Management Institute. (2017). *A guide to the project management body of*

   knowledge (*PMBOK Guide*; 6th ed.).

Project Management Institute. (2021). *A guide to the project management body of*

   knowledge (*PMBOK Guide*; 7th ed.).

Rahman, M., & Adnan, T. (2020). Risk management and risk management performance

   measurement in the construction projects of Finland. *Journal of Project*

   Management, 5, 167-178. https://doi.org/10.5267/j.jpm.2020.5.001

Ramazani, J., & Jergeas, G. (2015). Project managers and the journey from good to great:

   The benefits of investment in project management training and education.

   International Journal of Project Management, 33(1), 41–52.

   https://doi.org/10.1016/j.ijproman.2014.03.012

Rammelt, C. (2018). Infrastructures as catalysts: Precipitating uneven patterns of

development from large-scale infrastructure investments. *Sustainability, 10*(4)*,* 1–

15. https://doi.org/10.3390/su10041286

Ramos, P. A., & Mota, C. M. D. M. (2016). Exploratory study regarding how cultural

perspectives can influence the perceptions of project success in Brazilian

companies. *Production, 26*(1), 105–114.

https://doi.org/10.1590/0103-6513.173114

Ranney, M. L., Meisel, Z. F., Choo, E. K., Garro, A. C., Sasson, C., & Morrow Guthrie,

K. (2015). Interview-based qualitative research in emergency care Part II: Data

collection, analysis and results reporting. *Academic Emergency Medicine, 22*(9)*,*

1103–1112. https://doi.org/10.1111/acem.12735

Rasool, S. F., Chin, T., Wang, M., Asghar, A., Khan, A., & Zhou, L. (2022). Exploring

the role of organizational support, and critical success factors on renewable

energy projects of Pakistan. *Energy, 243*.

https://doi.org/10.1016/j.energy.2021.122765

Remer, D. S., & Ross, E. M. (2014). Review of project and engineering management

certifications offered by professional organizations. *Engineering Management

Journal, 26*(4)*,* 3–12. https://doi.org/10.1080/10429247.2014.11432023

Rezvani, A., Chang, A., Wiewiora, A., Ashkanasy, N. M., Jordan, P. J., & Zolin, R.

(2016). Manager emotional intelligence and project success: The mediating role

of job satisfaction and trust. *International Journal of Project Management, 34*(7),

1112–1122. https://doi.org/10.1016/j.ijproman.2016.05.012

Riordan, F., Papoutsi, C., Reed, J. E., Marston, C., Bell, D., & Majeed, A. (2015). Patient and public attitudes towards informed consent models and levels of awareness of electronic health records in the UK. *International Journal of Medical Informatics, 84*(4)*,* 237–247. https://doi.org/10.1016/j.ijmedinf.2015.01.008

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology, 11*(1)*,* 25–41. https://doi.org/10.1080/14780887.2013.801543

Rolstadås, A., Tommelein, I., Morten Schiefloe, P., & Ballard, G. (2014). Understanding project success through analysis of project management approach. *International Journal of Managing Projects in Business, 7*(4)*,* 638–660. https://doi.org/10.1108/IJMPB-09-2013-0048

Rogers, T. (2019). Project Success and Project Team Individuals. *European Project Management Journal. 9*(1). 27-33. https://doi.org/10.18485/epmj.2019.9.1.4.

Rowley, J. (2014). Designing and using research questionnaires. *Management Research Review, 37*(3)*,* 308–330. https://doi.org/10.1108/MRR-02-2013-0027

Roy, K., Zvonkovic, A., Goldberg, A., Sharp, E., & LaRossa, R. (2015). Sampling richness and qualitative integrity: Challenges for research with families. *Journal of Marriage & Family, 77*(1)*,* 243–260. https://doi.org/10.1111/jomf.12147

Rugenyi, F. (2015). Assessment of the triple constraints in projects in Nairobi: The

project managers' perspective. *International Journal of Academic Research in Business and Social Sciences, 5*(11)*,* 1–16.

https://doi.org/10.6007/IJARBSS/v5-i11/1889

Rugenyi, F. (2016). Assessment of the influence of project management competence on the triple constraint in projects in Nairobi. *International Journal of Academic Research in Business and Social Sciences, 6*(4)*,* 295–309.

https://doi.org/10.6007/IJARBSS/v6-i4/2108

Rui, Z., Peng, F., Ling, K., Chang, H., Chen, G., & Zhou, X. (2017). Investigation into the performance of oil and gas projects. *Journal of Natural Gas Science and Engineering, 38,* 12–20. https://doi.org/10.1016/j.jngse.2016.11.049

Ryan, F., Coughlan, M., & Cronin, P. (2009). Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and Rehabilitation, 16*(6)*,* 309–314. https://doi.org/10.12968/ijtr.2009.16.6.42433

Saeedi, A. S. Al, & Karim, A. M. (2022). Major factors of delay in developing countries construction projects: Critical review. *International Journal of Academic Research in Business and Social Sciences, 12*(5), 797–809.

https://doi.org/10.6007/IJARBSS/v12-i5/13309

Safapour, E., Kermanshachi, S., Kamalirad, S., & Tran, D. (2019). Identifying effective project-based communication indicators within primary and secondary stakeholders in construction projects. *Journal of Legal Affairs and Dispute*

Resolution in Engineering and Construction, *11*(4).

https://doi.org/10.1061/28ASCE29LA.1943-4170.0000332

Sage, D., Dainty, A., & Brookes, N. (2014). A critical argument in favor of theoretical

pluralism: Project failure and the many and varied limitations of project

management. *International Journal of Project Management, 32*(4)*,* 544–555.

https://doi.org/10.1016/j.ijproman.2013.08.005

Samset, K., & Volden, G. H. (2016). Front-end definition of projects: Ten paradoxes and

some reflections regarding project management and project governance.

International Journal of Project Management, 34(2)*,* 297–313.

https://doi.org/10.1016/j.ijproman.2015.01.014

Sari, Y. I., & Rahman, E. (2021). Roads for communities, not commodities: A qualitative

study of the consequences of road development in Papua, Indonesia. *Human

Ecology Review*, *27*(1), 139–161. https://doi.org/10.22459/HER.27.01.2021.08

Sarmento, V. P., Gysels, M., Higginson, I. J., & Gomes, B. (2017). Home palliative care

works: But how? A meta-ethnography of the experiences of patients and family

caregivers. *BMJ Supportive & Palliative Care, 7*(4)*,* 390–403.

https://doi.org/10.1136/bmjspcare-2016-001141

Saunders, F. C., Gale, A. W., & Sherry, A. H. (2015). Conceptualising uncertainty in

safety-critical projects: A practitioner perspective. *International Journal of

Project Management, 33*(2)*,* 467–478.

https://doi.org/10.1016/j.ijproman.2014.09.002

Sauser, B. J., Reilly, R. R., & Shenhar, A. J. (2009). Why projects fail? How contingency

theory can provide new insights–A comparative analysis of NASA's Mars

Climate Orbiter loss. *International Journal of Project Management, 27*(7), 665–

679. https://doi.org/10.1016/j.ijproman.2009.01.004

Sepehri, M. (2015, July). Lesson learned knowledge in project management. In *2015*

Science and Information Conference (SAI), 949–953.

https://doi.org/10.1109/SAI.2015.7237257

Serrador, P., & Turner, R. (2014). The relationship between project success and project

efficiency. *Project Management Journal, 46*(1), 30–39.

https://doi.org/10.1002/pmj.21468

Sha, K. X. (2016). Understanding construction project governance: An inter-

organizational perspective. *International Journal of Architecture, Engineering*

and Construction, 5(2), 117–127. https://doi.org/10.7492/IJAEC.2016.012

Shamoo, A. E., & Resnik, D. B. (2015). *Responsible conduct of research* (3rd ed.).

Oxford University Press.

Shaqrah, A. A. (2018). Analyzing business intelligence systems based on 7s model of

McKinsey. *International Journal of Business Intelligence Research*, *9*(1), 53-63.

https://doi.org/10.4018/ijbir.2018010104

Shenhar, A. (2015). What is strategic project leadership? *Open Economics and*

Management Journal, 2, 29–37. https://doi.org/10.2174/2352630001502010029

Shenhar, A., & Holzmann, V. (2017). The three secrets of megaproject success: Clear strategic vision, total alignment, and adapting to complexity. *Project Management Journal, 48*(6), 29–46. https://doi.org/10.1177/875697281704800604

Shenhar, A. J., & Dvir, D. (2007). Project management research—The challenge and opportunity. *Project Management Journal, 38*(2)*,* 93–99. https://doi.org/10.1177/875697280703800210

Shipman, M. D. (2014). *The limitations of social research* (4th ed.). Routledge.

Silva Susil, G. A. K., Warnakulasooriya, B. N. F., & Arachchige, B. J. H. (2015, December 7). Critical success factors for construction projects: A literature review. In *Proceedings of the 12th International Conference on Business Management*. https://doi.org/10.2139/ssrn.2699890

Simpeh, E. K., Ndihokubwayo, R., Love, P. E., & Thwala, W. D. (2015). A rework probability model: A quantitative assessment of rework occurrence in construction projects. *International Journal of Construction Management, 15*(2), 109–116. https://doi.org/10.1080/15623599.2015.1033814

Simpson, A., & Quigley, C. F. (2016). Member checking process with adolescent students: Not just reading a transcript. *Qualitative Report, 21,* 376–392. https://doi.org/10.46743/2160-3715/2016.2386

Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research:

Problems and opportunities within sport and exercise psychology. *International*

Review of Sport and Exercise Psychology, 11(1)*,* 101–121.

https://doi.org/10.1080/1750984X.2017.1317357

Smith, K. A., Macias, K., Bui, K., & Betz, C. L. (2015). Brief report: Adolescents'

reasons for participating in a health care transition intervention study. *Journal of*

Pediatric Nursing, 30(5)*,* e165–e171. https://doi.org/10.1016/j.pedn.2015.05.007

Snyder Dionisio, C. S. (2017). *A project manager's book of forms: A companion to the*

PMBOK guide (3rd ed., Kindle ed.). Wiley & Sons.

Söderlund, J., & Maylor, H. (2012). Project management scholarship: Relevance, impact

and five integrative challenges for business and management schools.

International Journal of Project Management, 30(6)*,* 686–696.

https://doi.org/10.1016/j.ijproman.2012.03.007

Stewart, H., Gapp, R., & Harwood, I. (2017). Exploring the alchemy of qualitative

management research: Seeking trustworthiness, credibility and rigor through

crystallization. *Qualitative Report, 22,* 1–19. https://doi.org/10.46743/2160-

3715/2017.2604

Stratton, S. (2021). Population research: Convenience sampling strategies. *Prehospital*

and Disaster Medicine, 36(4), 373-374.

https://doi.org/10.1017/S1049023X21000649

Sümen, Ö. Ö., & Çalisici, H. (2016). Pre-service teachers' mind maps and opinions on

STEM education implemented in an environmental literacy course. *Educational Sciences: Theory and Practice, 16,* 459–476. https://doi.org/10.12738/estp.2016.2.0166

Sunindijo, R. Y. (2015). Project manager skills for improving project performance. *International Journal of Business Performance Management, 16*(1)*,* 67–83. https://doi.org/10.1504/IJBPM.2015.066041

Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *Canadian Journal of Hospital Pharmacy, 68*(3)*,* 226–23. https://doi.org/10.4212/cjhp.v68i3.1456

Svejvig, P., & Andersen, P. (2015). Rethinking project management: A structured literature review with a critical look at the brave new world. *International Journal of Project Management, 33*(2)*,* 278–290. https://doi.org/10.1016/j.ijproman.2014.06.004

Sydow, J., & Braun, T. (2018). Projects as temporary organizations: An agenda for further theorizing the interorganizational dimension. *International Journal of Project Management, 36*(1)*,* 4–11. https://doi.org/10.1016/j.ijproman.2017.04.012

Takele, Y., & Teklu, G. K. (2016). Success factors and criteria in the management of international development projects: Evidence from projects funded by the European Union in Ethiopia. *International Journal of Managing Projects in Business, 9*(3)*,* 562–582. https://doi.org/10.1108/IJMPB-06-2015-0046

Thorpe, A. S. (2014). Doing the right thing or doing the thing right: Implications of participant withdrawal. *Organizational Research Method*s, *17*(3)*,* 255–277. https://doi.org/10.1177/1094428114524828

Too, E. G., & Weaver, P. (2014). The management of project management: A conceptual framework for project governance. *International Journal of Project Management, 32*(8), 1382–1394. https://doi.org/10.1016/j.ijproman.2013.07.006

Tosi, H. L., & Slocum, J. W. (1984). Contingency theory: Some suggested directions. *Journal of Management, 10*(1), 9–26. https://doi.org/10.1177/014920638401000103

Turner, S. F., Cardinal, L. B., & Burton, R. M. (2017). Research design for mixed methods: A triangulation-based framework and roadmap. *Organizational Research Methods, 20*(2)*,* 243–267. https://doi.org/10.1177/1094428115610808

Vacar, A. (2014). Leadership—A necessity in projects. *Studies in Business and Economics, 9,* 128–134.

Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice, 6*(5), 6–7. https://doi.org/10.5430/jnep.v6n5p100

van der Hoorn, B. (2016). The project-space model: Visualizing the enablers and constraints for a given project. *International Journal of Project Management, 34*(2)*,* 173–186. https://doi.org/10:1016/j.ijproman.2015.10.006

van der Hoorn, B., & Whitty, S. J. (2015). A Heideggerian paradigm for project

    management: breaking free of the disciplinary matrix and its Cartesian ontology.

    International Journal of Project Management, 33(4)*,* 721–734.

    https://doi.org/10.1016/j.ijproman.2014.09.007

Varajão, J., Fernandes, G., & Silva, H. (2020). Most used project management tools and

    techniques in information systems projects. *Journal of Systems and Information*

    Technology, *22*(3)*,* 225-242. https://doi.org/10.1108/JSIT-08-2017-0070

Venkatesh, V., Brown, S. A., & Sullivan, Y. W. (2016). Guidelines for conducting

    mixed-methods research: An extension and illustration. *Journal of the Association*

    for Information Systems, 17(7)*,* 435–495. https://doi.org/10.17705/1jais.00433

Verner, J. M., Brereton, O. P., Kitchenham, B. A., Turner, M., & Niazi, M. (2014). Risks

    and risk mitigation in global software development: A tertiary study. *Information*

    and Software Technology, *56*, 54-78. https://doi.org/10.1016/j.infsof.2013.06.005

Vidal, G. G., Campdesuñer, R. P., Rodríguez, A. S., & Vivar, R. M. (2017). Contingency

    theory to study leadership styles of small businesses owner-managers at Santo

    Domingo, Ecuador. *International Journal of Engineering Business Management,*

    9. https://doi.org/10.1177/1847979017743172

Voropaev, V., Gelrud, Y., & Klimenko, O. (2016). Who manages what? Project

    management for different stakeholders. *Procedia-Social and Behavioral Sciences,*

    226, 478-485. https://doi.org/10.1016/j.sbspro.2016.06.214

Wallace, M., & Sheldon, N. (2015). Business research ethics: Participant observer perspectives. *Journal of Business Ethics, 128*(2), 267–277. https://doi.org/10.1007/s10551-014-2102-2

Wang, G., Locatelli, G., Wan, J., Li, Y., & Le, Y. (2021). Governing behavioral integration of top management team in megaprojects: A social capital perspective. *International Journal of Project Management, 39*(4), 365-376. https://doi.org/10.1016/j.ijproman.2020.11.005

Williams, T. (2015). Identifying success factors in construction projects: A case study. *Project Management Journal, 47*(1), 97–112. https://doi.org/10.1002/pmj.21558

Williams, T. C. (2011). *Rescue the problem project: A complete guide to identifying, preventing, and recovering from project failure*. AMACOM.

Winch, G. M. (2014). Three domains of project organising. *International Journal of Project Management, 32* (5), 721731. https://doi.org/10.1016/j.ijproman.2013.10.012

Woodward, J. (1958). *Management and technology.* Her Majesty's Stationery Office.

Wu, G., Liu, C., Zhao, X., & Zuo, J. (2017). Investigating the relationship between communication-conflict interaction and project success among construction project teams. *International Journal of Project Management*, *35*(8), 1466-1482. https://doi.org/10.1016/j.ijproman.2017.08.006

Wu, G., Wang, H., & Chang, R. (2018). A decision model assessing the owner and

contractor's conflict behaviors in construction projects. *Advances in Civil Engineering*, *2018,* 1-11. https://doi.org/10.1155/2018/1347914

Wysocki, R. K. (2014). *Effective project management: Traditional, agile, extreme* (7th ed.). John Wiley & Sons.

Yap, J.B.H., Low, P.L. and Wang, C. (2017). Rework in Malaysian building construction: Impacts, causes and potential solutions. *Journal of Engineering, Design and Technology*, *15*(5), 591-618. https://doi.org/10.1108/JEDT-01-2017-0002

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education, 48*(2)*,* 311–325. https://doi.org/10.1111/ejed.12014

Yin, R. K. (2014). *Qualitative research from start to finish* (5th ed.). New York, NY: Guilford Press.

Yin, R. K. (2017). *Case study research: Design and methods* (6th ed.). Sage.

Ylinen, M., & Gullkvist, B. (2014). The effects of organic and mechanistic control in exploratory and exploitative innovations. *Management Accounting Research, 25*(1)*,* 93–112. https://doi.org/10.1016/j.mar.2013.05.001,93-112

Young, R., Chen, W., Quazi, A., Parry, W., Wong, A. and Poon, S.K. (2020), The relationship between project governance mechanisms and project success: An international data set, *International Journal of Managing Projects in Business,*

13(7), 1496-1521. https://doi.org/10.1108/IJMPB-10-2018-0212

Zamojska, A., & Próchniak, J. (2017). Measuring the social impact of infrastructure projects: The case of Gdańsk International Fair Co. *Journal of Entrepreneurship, Management and Innovation, 13*(4), 25–42. https://doi.org/10.7341/20171342

Zhu, J., & Mostafavi, A. (2017). Discovering complexity and emergent properties in project systems: A new approach to understanding project performance. *International Journal of Project Management, 35*(1), 1–12. https://doi.org/10.1016/j.ijproman.2016.10.004

Zoogah, D. B., Noe, R. A., & Shenkar, O. (2015). Shared mental model, team communication and collective self-efficacy: An investigation of strategic alliance team effectiveness. *International Journal of Strategic Business Alliances, 4*(4), 244–270. https://doi.org/10.1504/IJSBA.2015.075383

Zwikael, O., Pathak, R. D., Singh, G., Ahmed, S. (2014). The moderating effect of risk on the relationship between planning and success. *International Journal of Project Management*, *32*(3), 435-441. https://doi.org/10.1016/j.ijproman.2018.01.002

Zwikael, O., & Smyrk, J. (2015). Project governance: Balancing control and trust in dealing with risk. *International Journal of Project Management, 33*(4), 852–862. https://doi.org/10.1016/j.ijproman.2014.10.012

Appendix A: Interview Protocol

1. What strategies do you use in managing projects to avoid project failure?

2. What method works best in determining the choice of the project-management strategies you use in managing successful projects?

3. What barriers have you encountered in implementing your project-management strategies to reduce project failure rates?

4. How did you address the barriers to implementing the strategies to reduce infrastructure-project failure rates?

5. How is the effectiveness of the strategies to reduce infrastructure-project failure rates assessed?

6. Is there anything else you would like to share regarding the project-management strategies you apply to avoid project failure?