1-1-2021

Strategy Management for Guyana's Public Investment Projects Fulfillment

Rosco Horace Greene
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Rosco Greene

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. Alexandre Lazo, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Stella Rostkowski, Committee Member, Doctor of Business Administration Faculty

Dr. Janet Booker, University Reviewer, Doctor of Business Administration Faculty

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

Walden University
2021

Abstract

Strategy Management for Guyana's Public Investment Projects Fulfillment

by

Rosco Greene

MPA, University of Guyana, 2017

MBA, University of Guyana, 2012

BS, University of Guyana, 1995

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2021

Abstract

The public sector investment program (PSIP) hinges on the proper alignment of government strategies with project outcomes. The contingency theory offers insights for alignment in adopting the best project management approach. Yet, some of Guyana's PSIP managers struggle with alignment for the success of their projects. Using the contingency theory, the purpose of this qualitative multiple case study was to explore strategies PSIP managers used to align project outcomes with government strategies. Data collection was through the reviewed documentation and semistructured interviews with five successful managers who work for four project-based organizations in Demerara/Mahaica, Guyana. Yin's 5-step process was used to analyze the data. Four themes emerged: government/executive commitment and support for the project teams, efficient project management skills, aligning national strategy with project processes, and managing public project processes with information communication technologies. A key recommendation is for project executives to develop new project management paths for improved project performance fused with a portfolio intended to improve citizens' standard of living. The implications for positive social change include the potential for knowledge sharing among project practitioners and policymakers. Successful project outcomes may result in competitive advantages for those other businesses linked to public investment, enhancing citizens' social well-being.

Strategy Management for Guyana's Public Investment Projects Fulfillment

by

Rosco Greene

MPA, University of Guyana, 2017

MBA, University of Guyana, 2012

BS, University of Guyana, 1995

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2021

Dedication

My accomplishments in life are owed to the Lord from whom all good things do come. He has been my protector, provider, and rock on which I stand, thank you almighty. I would not have completed this DBA journey without the love and support of my wife Karen and my children Rachida, Rolanda, and Savannah. My dissertation is a fitting dedication for your unwavering support that never went unnoticed. I would also like to dedicate this dissertation to my extended family, friends, and work colleagues; all of you missed my association because of my focus on completion. I would also like to thank Dr. Scotland, Nkasi, and Keron for their editorial support and constant encouragement. It contributed to the process of my accomplished Doctor of Business Administration, a rarified achievement in Project Management from the prestigious Walden University. With sincere appreciation, my heart is filled with gratitude and thanks.

Acknowledgments

Throughout my academic journey, so many have helped along the way, and I am forever grateful. I must acknowledge both the academic and non-academic contributors, especially those at Walden University, for their part in guiding me through the doctoral journey right to its fruition. In recognition, I would like to acknowledge my faculty mentors: Dr. Alexandre Lazo, my chair; Dr. Stella Marie Rostkowski, second committee member; Dr. Neil Mathur, my former university research reviewer; Dr. Janet Booker, the serving university research reviewer and Dr. Gail Miles, the DBA program director. They have won my admiration for the dedication and devotion that continue to realize student success. Their steadfast acts of professionalism and displays of genuine affection in the discharge of their duties did not go unnoticed - thanks. I am also grateful to my classmates and the broader family of Walden University faculty for their contributions along the journey. Most importantly, I am thankful to God for his mercy, the gift of life, opportunities, and for contributing to humanity's advancement and upliftment.

Table of Contents

Section 1: Foundation of the Study....1

Background of the Problem....1

Problem Statement....2

Purpose Statement....3

Nature of the Study....4

Qualitative Research Question....5

Interview/Survey Questions....5

Conceptual Framework....6

Operational Definitions....7

Assumptions, Limitations, and Delimitations....8

Assumptions....8

Limitations....9

Delimitations....10

Significance of the Study....10

Contribution to Business Practice....11

Implications for Social Change....11

A Review of the Professional and Academic Literature....12

Conceptual Framework....14

Development Assistance and its Effect on Public Sector Development....18

Public Projects Investment and its Linkages to Other Sectors' Development....22

Public Sector Investment Program in Developing Countries 28
General Background Information on Guyana 34
Public Sector Investment in Guyana 36
Project Goals, Ethics and Communication Management 40
Project Management Leadership 45
Importance of Project Management 49
Project Management Processes 54
Business Management Strategies in Project Management 60
Project Success Factors 62
Best Practices in Project Management 65
Alignment of Project Management with Organizational Strategies 69
Project, Programs, and Portfolio Management 76
Summary and Transition 80
Section 2: The Project 82
Purpose Statement 82
Role of the Researcher 83
Participants 85
Research Method and Design 90
Research Method 90
Research Design 93
Population and Sampling 96
Ethical Research 98

Data Organization Technique 101
Data Analysis 103
Reliability and Validity 106
Reliability 108
Validity 109
Transition and Summary 110
Section 3: Application to Professional Practice and Implications for Change 112
Introduction 112
Presentation of the Findings 113
Theme 1: Government Executive Commitment for Project Team 115
Theme 2: Efficient Project Management Skills 124
Theme 3: Aligning National Strategy with Project Processes 131
Theme 4: Managing Public Project Processes with Information Communication Technology Tools 142
Applications to Professional Practice 151
Implications for Social Change 153
Recommendations for Action 155
Recommendations for Further Research 163
Reflections 164
Conclusion 166
References 169
Appendix A: Interview Protocol 206

Appendix B: Open-Ended Interview Questions 209

Appendix C: Collaborative Institutional Training Initiative Certification 210

Section 1: Foundation of the Study

Researchers have found weak public investment management institutions in many low-income and developing countries (e.g., Klakegg & Volden, 2017; Volden & Samset, 2017). Khan, Waris et al. (2019) found that public institutions could considerably increase project efficiency in the form of value for money through a prudent investment program with business strategy alignment. Improved infrastructure investment projects may result in long-term economic gains with links to other sectors. For example, in India, enhanced railroads decreased trade costs with increased profits for producers and reduced market prices, improving citizens' real income (Donaldson, 2018. The most sought-after project management studies are those of project success factors and causes of project failure. Project failure was first popularized as a topic for research in 1986 at the annual Project Management Institute (PMI) seminar and symposium and has since become one of the most discussed themes, according to Montequín et al. (2018). Researchers are continually looking for recommendations for the necessary actions to derive the most significant benefit from superior quality research that enhances knowledge.

Background of the Problem

While projects are the building blocks for economic development, developmental plans will only appear as a simple wish list without successful preparation and implementation. For example, public sector projects have not yielded their citizens' intended results (Arezki et al., 2017). Many projects delivered poor results because of misaligned project outcomes with government management strategies, including time, cost and scope, cost overruns, corruption, and reduced project maintenance (Arezki et al.,

2017; Cristóbal et al., 2018; Joslin & Müller, 2016). Adeyemi and Idoko (2008) recommended a new project model in a seminal study using PMI's guide to project methodology. The World Bank forged a partnership with PMI to strengthen project management applications in developing countries. It was seen as a valuable consideration because the institution represented the global conception for project management, according to Waheed (2016).

Guyana is an excellent case for further study because experiences have shown no formal guidelines within the various agencies to dictate how public projects should be selected and managed. Often, the users do not experience the fullest benefits from the investments (Shako, 2016). The World Bank (2018) estimated that Guyana's gross domestic product (GDP) would surge from the newly discovered oil and gas sector. With increasing GDP and foreign direct investments, both will stimulate a myriad of public and private projects in Guyana. The government can execute its public sector investment programs (PSIP) to create competitive advantages in businesses that benefit citizens.

Problem Statement

Many PSIPs experience poor project performance and failure because of the misalignment between the government strategies and project outcomes (Erceg & Gukam, 2018; PricewaterhouseCoopers, 2017). In a survey, strategic implementation misalignment accounted for 37% of the common factors associated with poor performance and project failure (PMI, 2017a). The general business problem is that the common factors of management capability, power structures, and the external project environment have caused project outcomes to be misaligned with government strategy.

The specific business problem is that some project managers in the public sector struggle to maximize project performance because they lack strategies to align the project outcomes with the government's strategies.

Purpose Statement

The purpose of this qualitative multiple case study was to explore effective strategies that public sector project managers can use to align the project outcomes with government strategies to maximize project performance. The specific population was those public sector project managers who successfully aligned their projects' outcomes with government strategies and worked for four project-based units within the geographic administrative region of Demerara/Mahaica (Region 4) Guyana. They participated in a semistructured interview and provided their perspectives and experiences in project management, which formed the source of the data collection process. A project is determined aligned if 80% of its expected outcomes are aligned with the organizational strategy (PMI, 2017a). The examined project reports verified the successful alignment from three constructs: (a) identification of set goals from the baseline studies and how they were captured within the project goals on a percentage basis, (b) examination of each of the alignment factors within the cost, time, and budget, and (c) examination of the end user's satisfaction from the stated goals of both the project and organization, all from a compliance rate of at least 80%. The study may contribute to positive social change if project managers can use the study findings to create a community of successful project practitioners to implement projects better.

Nature of the Study

The three research methods are qualitative, quantitative, and mixed methods, each with unique characteristics depending on the study's purpose (Marshall & Rossman, 2016). Quantitative methods are appropriate for measuring a phenomenon's impact, which involves studying situations that can influence outcomes using experiments and surveys (Molina-Azorin et al., 2017). The study objective required a deeper understanding of the phenomenon from knowledge-gathering, which does not involve variables. Given the qualitative nature, the research study did not include statistical tests of variables. The design methods associated with quantitative and mixed methods were unsuitable because qualitative research does not account for inferential statistics.

The four qualitative designs are (a) narrative, (b) phenomenological, (c) ethnographic, and (d) case study, each with unique designs and attributes. Researchers use the narrative design to explore a research subject's specific life experiences (Johnsen, 2016). Researchers use the phenomenological design when studying individuals' perceptions and experiences (Neubauer et al., 2019). Ethnographic is another design used by researchers to examine complex undertakings. Ethnographic researchers immerse themselves within a specific context to gather the data (Fusch & Ness, 2015). The study's purpose did not require the study of individuals' perceptions, life stories, or immersion into a group. Instead, I explored strategies for aligning projects' outcomes with the government's strategies, so I selected a case study design. Case studies offer researchers a better understanding of a phenomenon's "how and why" (Yin, 2018). The multiple case study design was suitable for the study. I explored the phenomenon using open-ended

questions, observations, coding, methodological triangulation, and documentation review, mainly because of the unclear circumstances and events when the phenomenon was explored (see Fusch et al., 2018).

Qualitative Research Question

RQ: What strategies do public sector project managers use to align project outcomes with government strategies to maximize project performance?

Interview/Survey Questions

1. What techniques do you use to manage relationship dynamics, engagement, and project stakeholders' support?
2. What techniques and tools do you use to handle project attributes such as project scope, timelines, budgets, risk, quality, and complexity?
3. What are the critical challenges associated with aligning infrastructure projects with business management techniques and tools, and how have the challenges been addressed?
4. What techniques do you use that allows for support and resources from the ministry to ensure project success?
5. How and when do you leverage or mitigate organizational characteristics, such as governance, structure, systems, incentives, and socio/cultural factors, to ensure project management success?
6. How is the concept of alignment communicated throughout the organization, and what are its effects on the project deliverables and milestones?
7. How do you share your personal project experiences?

8. How are issues and constraints dealt with within the project management processes?
9. What other feedback can you provide that you think can be critical for project success?

Conceptual Framework

The conceptual framework for the study was the contingency theory. According to Fiedler (1964), there is no single suitable method of doing things. The contextual setting will dictate the best workable approach, described as “job engineering.” The idea is that a project manager's role is to find the best possible fit between the organization, its environment, and subsystems. According to Fiedler (1964), leadership effectiveness is helpful from two methods, the leaders’ general temperaments and the circumstances they find themselves. Therefore, selecting an outlook broader than one tailored just for a unique/individual project is recommended by Teller et al. (2014). The suggestion implied that effectiveness lies in applying management behaviors to specific situations.

Researchers have found that project performance offers contradictory results because of the varying situational and environmental factors. The contingency approach is functional when exploring project practitioners' alignment (Floricel et al., 2016; Khan, Waris, et al., 2019). Researchers found the contingency theory to be a simplified approach that involves three different conceptual alignments: selection, interaction, and systems (Joslin & Müller, 2016). Strategies, processes, and structures can affect the project outcomes, all a logical progression of ideas between such studies' structural elements (Saunders et al., 2016).

In approaching projects with complexity, researchers found an inverse relationship with project success. The relationship is affected by strategy alignment, for which seasoned project practitioners used tools, techniques, and processes for successful alignment (Joslin & Müller, 2016). The choice of the contingency theory allows for insights into how best to accommodate those tools, techniques, and processes with the organization's management strategies within a given environment to satisfy project management's objectives (Floricel et al., 2016). The contingency theory was most beneficial for this study because it captured project novelty and complexity. I provided a medium by which skilled public sector project practitioners demonstrated successful project outcomes' alignment with government strategy maximized project performance.

Operational Definitions

To avoid misinterpretation of the concepts employed, a contextual understanding of the terms used is expressed in the following definitions:

Infrastructure project: The underlying physical system of a nation's transportation system, electrical system, water system, railway system, hospitals, and other publicly accessed and government-funded projects for the sole purpose of improving the standard of living of citizens and residents (Cole, 2017)

Project success: The result of a project meeting the expected/proposed deliverables that can be summarized in the triple project constraint of time, quality, and cost (PMI, 2018).

Project complexity: The extent of structural complexity, uncertainty, pace, dynamic complexity, novelty, and social-political and institutional complexities (Bolzan de Rezende & Blackwell, 2019).

Project Sector Investment Program: A "roadmap" exercise for governments to have in place with comprehensive statements on development objectives, policies, and programs for each of the key sectors to strengthen the linkages among programs across agencies and sectors (World Bank, 2018)

Strategic alignment: The process and the result of linking an organization's structure and resources with its strategy and business environment (Zolfaghari et al., 2017)

Portfolio management: The identification, prioritization, authorization, management, and control of projects, programs, and other related work to achieve specific strategic business objectives (PMI, 2017a).

Socioeconomic development: The process that involves both social and economic development in a country. The measured indicators are the GDP, life expectancy, and employment levels, among others (O'Neill-Carrillo et al., 2018).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are factual beliefs that researchers have found indispensable when conducting a study, although they cannot be proven (Pyrczak & Bruce, 2017; Simon & Goes, 2018). Researchers make assumptions concerning the participants' interviews on the premise that the constraints associated with time and effort to validate each

participant's answer allow for the assumptions (Simon & Goes, 2018). I assumed that the selected project managers were adequately diverse in experience and would report their project experiences accurately. Given the anonymity requirement, I further believed that the chosen project managers provided their honest reflections of their project success indicators. Anonymous participants are more likely, to be honest and accurate than when their participation is known (Allen, 2017). To promote a fair, reasonable, and factual response from the participants, I notified them of the right to refuse to answer any question. All responses would remain confidential concerning any classified information provided.

Limitations

Limitations are those potential weaknesses that result in constraints or flaws and are beyond the researcher's control. Limitations can also influence the outcome and validity of a study (Pyrczak & Bruce, 2017). Researchers identify the specific limitations of their studies to prevent the inappropriate generalizations of the findings and conclusions (Simon & Goes, 2018). My research included project managers who successfully aligned their projects' outcomes with government strategies to maximize project performance. My foremost concern was the lack of random selection in the chosen participants resulting in validity issues due to possible selection bias. The selection bias often affects the generalization of the results beyond the sample. Researchers may not replicate my research's conclusions and recommendations if their study settings are relatively different. Yin (2017) suggested using interview protocols to maintain uniformity during interviews to mitigate bias.

Delimitations

Delimitations represent a study's parameters within the researcher's control that define the survey's scope (Pyrczak & Bruce, 2017). Researchers use delimitations to explain the extent of the research scope's span (Simon & Goes, 2018). Researchers should not generalize my study's conclusions and recommendations if their research scope is not similar. My research included a specific population: A group of project managers who work for four project-based units. They participated in an interview that provided their perspectives and experiences in project management. The selected organizations are those with successful project results from seasoned project practitioners who demonstrated alignment of project outcomes with government management strategy, measured from three constructs: (a) identification of the set goals from the baseline studies and how they were captured within the project goals on a percentage basis; (b) exploration of each of the alignment factors of cost, time, and budget; and (c) examination of the end user's satisfaction from stated goals of both the project and organization, all from a compliance rate of at least 80%. A successfully aligned project represents a compliance rate of over 80% within budget, time, and scope while meeting original goals and business intent (PMI, 2017a).

Significance of the Study

Public sector investment project misalignment can affect other businesses with strategies linked to the public projects' completion. While citizens generally do not thoroughly scrutinize their government's expenditures, the net result is sometimes the misallocation of public spending with struggling economies (Klakegg & Volden, 2017).

Public investment faces unique challenges from the external environment. Finding a functional relationship between organization alignment attributes and successful project outcomes may provide new critical success factors for public sector investment. A project may create societal value when it meets social and environmental needs, bringing positive social change by allocating the project resources to social welfare (Santhosh & Baral, 2015).

Contribution to Business Practice

The study result may contribute to better public investment practices by providing policymakers with the competence to select and implement public strategic-based investment projects needed for economic development. Enhanced knowledge about alignment and performance output methods, coupled with government strategic development, can improve project decision-making resulting in a competitive advantage for other projects with linked strategies to that public investment.

Implications for Social Change

The study results may lead to positive social change through enhanced public sector project management, fostering citizens' satisfaction. In addition, maximized projects’ outcomes will enable the government to enjoy value for money in its expenditure programs, which helps expand social programs for development. Essential to the project selection and planning is supporting a clear understanding of those fiscal conditions and associated risks (Ahmad et al., 2018). Public project fulfillment may become less tedious as project managers better understand project outcomes' alignment with government strategies for success in public infrastructure programs.

A Review of the Professional and Academic Literature

This literature review focuses on the concept/role of strategic management in achieving public sector infrastructure project efficiency in developing countries such as Guyana. This review explored public sector project managers' strategies to maximize project performance and align project outcomes with government strategies. According to Saunders et al. (2015), the literature review presents a perspective that speaks to the theoretical approach within a framework for the conducted research. The review also accounts for the associated literature concerning the specific business problem forming the research justification. The specific business problem was that some project managers in the public sector struggle to maximize project performance because they lack strategies to align the project outcomes with the government's strategies.

Extensive research on government strategy alignment may help public sector project managers understand how to employ tactics to maximize project performance. However, few researchers have ventured into the field owing to the complex project environment in which public projects operate (Cristóbal et al., 2018). Further, researchers have noted significant causative factors that affect project outcomes associated with infrastructure projects (Cristóbal et al., 2018). To fully appreciate the challenges and the impending risks concerning project success, I explored the professional and academic literature available to public project managers to align with government strategies to maximize project outcomes.

The literature review provides a description and an analysis of other researchers' works (Saunders et al., 2015). The literature review outlines a systematic approach a

researcher uses to identify and analyze the work of other researchers. Literature mapping effectively organizes a significant amount of data and aids in synthesizing other research findings. A researcher can use the literature mapping to determine the relationship between themes and highlight research gaps, according to Chei-Chang (2009).

The reviewed literature provided the theoretical lens through which I considered the contingency approach. Because no single management approach will yield a compelling result, a more adaptive system is needed. Therefore, in using the literature mapping, I structured the literature review into the following topics: (a) conceptual framework, the contingency approach; (b) development assistance and its effect on public sector development; (c) public projects investment and its linkages with other sector development; (d) PSIP in developing countries, (e) general infrastructure project background information on Guyana; (f) public sector investment in Guyana; (g) importance of project management; (h) project goals, ethics, and communication management; (i) project management processes; (j) business management strategy in project management; (k) project success factors; (l) best practices in project management; (m) alignment of project management with organizational strategies; and (n) project, programs, and portfolio management.

In considering the literature review, I relied on information from the following resource centers; Walden University online library, Google Scholar, ProQuest, Emerald Management Journals, Business Source Complete, ABI/INFORM, SAGE, and EBSCO. The resource collection included peer-reviewed journal articles, dissertations, newspaper articles, and textbooks, all of which informed the subject of this study. The keywords

used to search the databases for references relevant to the study's objectives included contingency theory, project management theory, infrastructure project management, project management governance, project success, and infrastructure project failure. I achieved Walden University's stipulated requirements of having 85% of my references peer-reviewed and published well within the 5-year requirement before my expected graduation date.

Conceptual Framework

The contingency theory was the conceptual framework used for this study. According to the theorists, there is no single correct method of doing things (Burns & Stalker, 1961; Fiedler, 1964). However, the contextual setting will dictate the best workable approach, described as 'job engineering' (Fiedler, 1964). Internal and external circumstances will decide the optimal course of action. The contingency approach is considered the most appropriate for investment projects' management. Its flexibility has given the typical uncertainty from the nonroutine site environment of operations and supportive adaptation (Teller et al., 2014). Given organizations' uniqueness, their management system (both mechanistic and organic) must respond to the market's changing dynamics and the technological environment, whether stable or innovative (Burns &Stalker, 1961).

The mechanistic and organic management systems proposed by Woodward (1958) and later discussed by Burns and Stalker (1961) offer no single management practice to achieve organizational resource management efficiency. The perfect management system will depend on the changing market and technological environment

(Burns & Stalker, 1961). The mechanistic management method involves stable conditions with full knowledge of its requirements through its breakdown structure. The organic process of management involves project characteristics subject to changing conditions. It would not be possible to provide scope details at the project's onset (Wysocki, 2019). Therefore, the organic system allows for teams to become self-organizing, self-sufficient, and self-directing.

The current understanding of the contingency theory shaped by Nebeker (1975) is an integration of Fiedler's work on leadership style effectiveness, according to Northouse (2019). Starkey et al. (1991) consolidated the contingency theory using strategic flexibility to extend the framework to organizational choice utilizing the goodness-of-fit of strategy and business activities against management systems' structure. Besides, project management challenges of complexity and uncertainty allow for no formal or universally accepted theoretical foundation for project management. The most considered and applied theoretical perspective is that of contingency theory. Therefore, the project's success is contingent upon a combination of organizational, project, and people-based determinants (Fiedler, 1964).

The contingency model is appropriate when explaining the organization's decision concerning the project management strategies' design. The process helps address diversity in project contexts in changing environmental conditions (Wysocki, 2019). Project complexity and project uncertainty are two variables that project managers encounter on every project. They are even more challenging within public sector megaprojects, according to Hazir and Ulusoy (2020). Saunders et al. (2016) described

project complexity as a state where all facts concerning a particular situation are unknown. Project uncertainty is seen as a potential favorable or unfavorable risk that surfaces throughout a project (Qazi et al., 2020). Because projects include ever-changing dependent and contingent activities, contingency theory regularly works as a designated framework for describing success or failure.

Several studies in the literature review focused on project complexity and the factors that can influence project success. While there is little evidence concerning differences in complexity and project success factors, researchers have found that project success has an inverse relationship to project complexity (Floricel et al., 2016). Researchers have also seen the need for a clear distinction in complexity, as categorization helps identify the appropriate model for managing the project (Cristóbal et al., 2018). Depending on the complication's source, the complexity may be classified as either structural, technical, directional, or temporal that needs to be integrated for a better approach. Cristóbal et al. (2018) found that managing projects in complex environments require aligning management techniques that support planning, scheduling, executing, and controlling. While strategy formulation is delicate, Adeyemi and Idoko (2008) found that putting a strategy to work can be even more challenging within cross-functional cultures.

The contingency approach may help understand risk management for complex projects in explaining an organization’s success or failure (Wysocki, 2019). Complexities in project management were considered best in light of the contingency theory because of its alignment with my study purpose. The challenges of the external project environment,

power structures, and management capability are the complex factors that public sector project managers must meet. The benefit is that it will result in successful project outcomes aligned with the government strategies that maximize project performance. Oputa (2017) combined the techniques used to manage successful megaprojects as a simplified approach within three conceptual alignments: selection, interaction, and systems.

Researchers use contingency theory analysis to determine the relationship between a firm's structure and its environment and how its structure will react when faced with contingencies at different performance levels (San et al., 2018). The contingency theory is a concept that promotes flexibility in the choice of actions to succeed in an uncertain environment. Project managers get insights into how best to apply management strategies within the given context to satisfy project management outcomes (Cristóbal et al., 2018). Project results are superior when project practitioners match executive actions with internal organizational characteristics and external environments. According to Joslin and Müller (2015), the approach must focus on the internal project characteristics and those project management activities that need to match the project's novelty and complexity.

Horning's (2018) conceptual framework, a product of Fiedler's contingency theory, focused on organizations' project success in Pennsylvania health care. The researcher found a high possibility of completion when the project manager knows the essential factors that define success or failure and can modify strategy alignment when appropriate. Oputa (2017) opined that contingency theory has now widened to include a

class of methods whose outcomes are contingent on a multiplicity of factors. Oputa (2017) invoked a specific application for those unique situations. It requires a methodology that explains all processes in aggregate, and its relatedness must be considered. Because there is no single best way to manage, there will be no universal helpful strategy in any given situation. Therefore, the contingency approach helps promote flexibility in any chosen actions to succeed in an environment of complexity and uncertainty.

Development Assistance and its Effect on Public Sector Development.

At a conference in Ethiopia, both low-income and developing countries pledged their commitment to resolve their bilateral partners' developmental challenges. The hope was that the financial aid would be used prudently to build countries' public expenditure for economic growth. The result revealed that government expenditure negatively affects economic growth in the short and long run (United Nations, 2015). Still, the developing countries had asked their developmental partners for space and independence to prepare domestically (United Nations, 2015). The conference provided a sound basis for development funding; on the one hand, the global community wanted a collective sustainability accord. Simultaneously, the developing countries' leaders hoped their donor partners honored the pledged assistance needed to achieve the United Nations millennium goals (United Nations, 2015). Developing countries depended on assistance for their long-term infrastructural development, even though the literature points to many developing countries having diminishing returns to aid (Presbitero, 2016).

Research on the various bottlenecks to developmental assistance impeding countries' capacities to absorb foreign aid found the primary challenge to be cross-cultural complexities (Presbitero, 2016). A project assessment by the World Bank measured the extent to which cross-country differences impacted the project outcomes and found the following to be impactful: (a) institutional quality, (b) macroeconomic policies, and (c) macroeconomic performance, which together explain project outcome variability (Bulman et al., 2015). Bulman et al. (2015) found that country-level macro measures of sound institutional policies are correlated with project outcomes. This explains how country-level performance is essential for the effective use of resources.

The empirical literature does not provide a consistent body of evidence supporting a positive association between the scaling-up of public investment and economic growth, according to Presbitero (2016). In contrast, Easterly and Rebelo (1993) found that public investment program outputs correlate with growth across countries in a seminal study. Similarly, Global Infrastructure Hub (2019) found that every dollar spent on infrastructure development yields an estimated increased GDP between USD 0.05 to USD 0.25, which created an economic return of between 5% - 25% in the long run (Global Infrastructure Hub, 2019). The opposite is true in Devarajan et al.'s (1996) study, which found that public capital in developing countries' expenditures was negatively associated with economic growth. The economic arguments led to another study premised on a precisely formulated synthetic physical infrastructure index that estimated public investment's productivity impact (Calderón et al.,2015).

Similarly, researchers found that 10 % of infrastructure expenditure increased the per capita outcomes by 0.7 % in the long run. Researchers can also point to the literature supporting the notion that infrastructure investment could create long-term development (e.g., Easterly & Rebelo, 1993; Global Infrastructure Hub, 2019). Besides, even when project implementation ends, the short-term outcomes may be negligible. The long-term outcomes can be successful because the broader sets of goals are met instead of a narrow subset (Radujkovic & Sjekavica, 2017).

The historical experiences of the 1980s concerning the effects of government infrastructure investments on productivity provided little guidance on projects' management worthiness. For example, several public-sector investment projects delivered poor results both in the short and long term, primarily because of cost overruns, corruption, and reduced project maintenance (Arezki et al., 2017). Given the challenges of the developing countries, the World Bank and other financial institutions have since created social safeguarding norms and policies for their funded projects. Those safeguards resulted from the bank's challenges with their continued loan advancement to developing countries (World Bank, 2017).

Despite having achieved independence in 1966, Guyana still lacks the local capacity for project execution and management. The international institutions did not spare that observation from their country report (International Monetary Fund[IMF], 2017; World Bank, 2017). Guyana's traditional approaches to public administration offer little value in preparing project administrators for the complex tasks of planning and executing public investment projects, according to the IMF country report (2017).

Guyana's unique challenges include the external project environment, power structures, and management capability. Shako (2016) opined that the challenges also include (a) poor construction designs missing critical details; (b) costs overrun with missed deadlines; (c) approved substandard work from inadequate consulting supervision; and (d) early destruction leading to remedial work within the defect liability period and, in other cases, well within design life-spans, for which there were little or no penalized action against the contractor. In addition, government bureaucracy and regulatory measures are inadequate to deal with the dynamics of change. The IMF country report (2017) found little consideration when formulating operational frameworks for project management as an integrated system. Guyana's sugar industry modernization is a case of strategy misalignment. Singh (2015) argued that modernization occurred when the world market prices for sugar were dramatically declining and still pursued without any projected payback plan. Singh noted that a detailed sensitivity analysis concerning pricing options could have ascertained the project's viability. Nevertheless, the new sugar factory became a reality, Singh stated.

Given Guyana's discoveries in oil and gas, spending through the accelerator principle will spur development within the other economic sectors. Boehm (2019) postulated that governments could increase spending to boost their economy, often through infrastructure development, thereby increasing their aggregate demand depending on the multiplier. The Guyana government has since embarked on reforms to diversify the economy through oil windfalls into human development. According to the

IMF country report (2017), what is continuously missing in Guyana is the capacity for sustainable project execution.

In support of the country's capacity building, the World Bank (2018) approved a US$35 million development policy credit for fiscal management support. Various stakeholders have raised concerns and inquired about political interference issues in every stage of Guyana's infrastructure projects' cycle. Shako (2016) suggested that such an obstruction can affect critical decisions that impact the project's success. Simultaneously, there are well-intended project execution units in Guyana, many of which work best to adjoin the already established government bureaucracy.

Public Projects Investment and its Linkages to Other Sectors' Development

Public sector investment constitutes a more comprehensive developmental program for governments, including roads, highways, education, power plants, and water supply (Donaldson, 2018. increasing expenditure spending is expected to boost their economy, often through infrastructure development (Boehm (2019). Therefore, infrastructure investment can be considered as a public policy tool that can result in economic growth. Besides, the nature and linkages of the other sectors' interactions with the governments' fiscal policies may also yield economic growth in developing countries. Development planners have integrated backward and forward linkages to benefit from the interactions (Dash, 2016).

In illustrating linkages in public sector investment, both forward and backward linkages are of importance. A forward linkage encourages investments in subsequent stages in other linked sectors. In contrast, the backward linkage occurs when the project

encourages investment by facilitating and enabling other projects to succeed (Das et al., 2018). Infrastructure and its linkages are best in constructing roads, railways, water, ports, communication, and power grids. However, Khan, Waris et al. (2019) found that a country's public infrastructure investment can also open new opportunities in other country sectors. Successful implementation of infrastructure projects' resources requires synergies between public and private investments to ensure shared use of the infrastructure and realize mutual benefits to businesses and, ultimately, citizens' satisfaction.

Public capital for infrastructure has also impacted private investment in countries' growth and development. According to Nguyen and Phong (2017), economists use the Cobb-Douglas production function to represent a technological relationship between the amounts of two or more inputs - physical capital (K) and labor (L) - and the outcomes (Y) produced from those inputs. Nguyen and Phong (2017) found a variation of the model by Robest (1956), who used the Solow model (another production function) to analyze growth. The Solow model evaluates the product from three inputs (capital, labor, and knowledge) over time. Further, the researchers explained the relationship between inputs and the growth of a nation's productive capacity, which economists refer to as the production function (Nguyen & Phong, 2017). As a prevailing view, public investment strongly affects economic growth, reflected by aggregate supply and demand. Public investment directly impacts aggregate demand as government expenditure and aggregate supply as a production function (capital factor).

Today, government expenditures extend beyond the traditional view of supplying goods and services with an integrating link that supports infrastructure projects development and assists the other sectors' growth and development. Private investment correlates with government spending and is directly related to the existing public investment. Researchers found a positive correlation between public infrastructure and private investment (Donaldson, 2018).

An expansion in public investment can increase private investment, allowing firms to have broader access to markets due to construction in roads, ports, and railways (Donaldson, 2018). Public sector investment projects with linkages to the other sectors in the economy play a central role in production functions by providing the required capital for development without private financing (UNCTAD, 2018). UNCTAD (2018) found that infrastructure development with broader strategic objectives and socioeconomic requirements effectively counter the bankability approach for project approval. Relative to cost-benefit analysis, development strategies are not pursued solely on financial viability but also on other socioeconomics criteria.

There is always the risk that expanding public sector investment may consume available finances that otherwise would have gone to the private sector. According to Deleidi et al. (2019), the correlative relationship of private financing investment suggested that the private sector's credit availability declines because the government's fiscal spending crowds out of private sector investment. Investments undertaken by highly subsidized state economic programs are in many instances financed through printing money and internal and external debt financing, resulting in deficit spending.

Governments may sometimes be forced into deficit spending because the needed investment is costly. The high cost sometimes works as a disincentive to the private sector - a non-profitable investment opportunity, leaving the government to invest. Public investment plays many competing and offsetting roles in the private sector's investment activities (Deleidi et al., 2019). The net result of public investment on private investment can be expressed as both leakages and linkages. Private sector investment activities may enhance future growth in real income and become much more sensitive to capital provision. Deleidi et al. (2019) found that public infrastructure has an overall simulative impact on private investment. The authors found that public sector investment policies can have permanent real-effect that can enhance the economy's physical and financial resources.

An essential consideration in selecting public projects is establishing an efficient network that integrates the investments into compatible and existing infrastructure. Doing this allows for business strategy linkages in both the public and private sectors, according to Boehm (2019). For example, China led a more public-investment-driven economy with state control and gained sustainable growth by strongly influencing the private sector. China further designed public policies for citizens' benefit rather than prioritizing the private sector (Ari & Koc, 2020). The country implemented new policies in the 1990s that enabled foreign direct investment in the economy through free enterprise and capitalist ideas within a socialist framework. In so doing, China empowered the private sector by aligning them with public policy and supporting public investment, resulting in

a solid direct causal relationship between the public and private sectors (Ari & Koc, 2020).

Public sector investment forms part of a country's broader developmental plan. For example, roads that support farms to market for farmers' access have reduced the cost for farmers and consumers. Similarly, the government invests in power grids that reduce the average cost and increase scale advantages during production (Donaldson, 2018; Khan, Memon, & Ahmad, 2019). There are limited "farm to market" access roads, with no beneficial network effects for domestic farmers. Public investments in roads and supporting infrastructure and incremental node's benefits may increase project outcomes. Khan, Waris et al. (2019) found that the marginal benefit of investing in infrastructure in developing countries is highest when it adds to an existing but not fully matured network. Coordinating public investment programs is essential for adding incremental linkages in an emerging network that can yield more benefits.

The government's public investment decisions should be held at a portfolio level to account for those network effects, evaluating projects as part of a broader system rather than one in isolation. Assessing the influence of public infrastructure expenditure and its outcomes on linkage industries requires special consideration. Different cross-country cultural factors may create additional reviews to deal with country-specific effects. Interestingly, the most significant impact occurs in the faster-growing countries - the "Asian tiger" economies. For example, the Singapore government initiated linked companies similar to state-owned enterprises after their independence in 1965 to develop the economy (Yahya, 2012). The intention was to create commercial entities in the

private sector because the private sector alone lacked entrepreneurial capacity and venture capital. The creation of linked companies was strategic because they operated solely as profit-driven (Yahya, 2012). The comparative advantages derived from the public investment provided the link where the investment outcomes became the factor input for those in commerce to gain economies of scale. Khan, Waris et al. (2019) found that political factors often influence the selection of public sector investment projects. Governments must consistently prioritize capital investment in new ventures with a convenient, politically aligned strategy, even if the project has a weak economic rationale.

An essential function of public sector investment is to provide services that meet the citizens' needs efficiently and effectively. Hvidman and Andersen (2014) held that achieving the goal to fully realize the end users' satisfaction is significantly linked to successful organizational performance. It would help governments establish a portfolio of high-quality projects with clear metrics supporting their contribution to sectoral linkages for social and economic growth. Mishra et al. (2019) found that the projects' holistic management is improved by establishing a project management office (PMO). The Chilean example best illustrates how the approach works. In Chile, all proposed public sector investment projects go to the Ministry of Housing and Urban Planning and the National Investment System. They use standardized procedures and metrics to evaluate the soundness and benefits of the projects' linkages. Bielenberg et al. (2020) found that project proposal rejection is approximately 25% to 35% in Chile. Based on objective criteria, the Chilean illustration included direct and indirect economic impact and social

aspects, the allocation of financing, and a combination of cost-benefit analysis and national goals.

In Malaysia, the government implemented a government transformation program under the new public management approach. This initiative was titled ‘one Malaysia, people first, performance now.’ Under the program, the emphasis was on implementing KPIs in seven priority areas to infuse private sector philosophy in the public sector by measuring and improving government service deliverability (Hughes, 2012). Similarly, Lubbe (2016) opined that PSIPs support the local economy by creating the public infrastructure to achieve economic growth and development.

In specific instances, some public investment undertakings result from market failure - where the private sector considers some investments to be too risky. They cannot or are unwilling to engage in those projects, citing substantial financial costs and the lack of profit from the investments. Guyana offers a comparative illustration concerning who bears the cost for a significant investment with low returns. The absence of private capital caused the government to undertake a massive public investment project to bridge the digital divide under the information communication technology (ICT) Access and eServices for the hinterland poor and remote communities project (Guyana Redd+ Investment Fund, 2017).

Public Sector Investment Program in Developing Countries

Stuckenbruck and Zomorrodian (1987) seminal study investigated project management in developing countries. The researchers found that project management practice requiring drastic modification tailored to localized cultures' adaption is essential

for developing countries. The researchers did not use empirical data but suggested that plans associated with implementing projects in a developing country should consider; (a) cultural factors, (b) economic, (c) political, and (d) the administrative system within public sector agencies

While projects are implemented and managed locally, their applications are practically in the strictest manner of widely international project management standards (Waheed, 2016). Project professionals from associations such as the PMI and multinational organizations that frequently partner with local project management associations help bridge the organization's project capacity knowledge gaps. The management of infrastructure projects is a function of their location, purpose, objectives, and stakeholders, which significantly impact performance. In their project, governments with global participants will experience varying cultural differences and political systems that attract high public and political interest (Hoxha & McMahan, 2019). Understanding the appropriate practices of project management in developing countries, given their cross-culture factors, will facilitate a better understanding of how best to manage those projects successfully.

The flow of foreign capital into a country is often a function of developing countries' financial systems. Further, economic and financial considerations often constrain infrastructure development. Economic development contributes to both the quality and quantity of capital available in the financial markets. However, the 'quality of capital' influences economic growth and development in an economy (Lubbe, 2016). Although project finance is a complex mechanism, it is successful in weak financial

economies. Project financing helps eradicate infrastructure backlogs to improve economic development. Lubbe (2016) concluded that policy changes should create an enabling environment for conducive infrastructure development.

Contrary to the view that public-sector investment projects enjoy long-term successes, several of those investments in the 1980s delivered poor short-term and long-term results: Issues encountered were cost overruns, corruption, and reduced project maintenance (Arezki et al., 2017). When examined, the challenges of the 1980s carried the same thrust – the project management strategies employed were all biased towards the principles of the North American standards of project management, research, and experiences (Adeyemi & Idoko, 2008).

Interestingly, Adeyemi and Idoko's (2008) observation of the project management's western-oriented techniques is not straightforward for anyone to quickly learn and implement in developing countries. Developing countries with many cross-cultural traits have found those tools and techniques problematic, which led to the conclusion that a unique project management approach is needed to address country-specific impediments to local implementation (Adeyemi & Idoko, 2008)

Calderón et al. (2015) asked two fundamental questions while conducting their research. The questions were within the ambit of government-administered public projects to determine project management practice relevance in developed countries. First, is project management equally applicable to all nations? Second, when is it appropriate, and what form of project management to recommend? Most of the challenges associated with projects in developing countries remain intracultural in nature.

The frequently asked questions are those of a non-technical cultural approach to improving project execution in developing countries, according to Akade (2017). The design method accounted for the complex dynamics and multi-faceted activities in the project managers' experiences and possible improvements to their practice. The results reveal a positive correlation between culture and project outcome and the relationship between culture and behavior (Akade, 2017). In effect, those challenges that are intracultural in nature remain burdened by misaligned strategies.

Adeyemi and Idoko (2008) asked the following questions in light of developing countries' challenges with project management: (a) How do we define project and project management? (b) What factors drive the conception of projects in developing countries? (c) What barriers and impediments exist as hindrances to project management? (d) Why local capacity development exists for project management? (e) Is there a suggested model for local project management capacity and process? The answer may imply that project management, techniques, and training in management strategies may be productive if there is a realistic understanding of developing countries' complexities and uncertainties. Volden's and Andersen's (2018) study is the first step towards better. The researchers identified a hierarchical system that explains the relationship between project owners from three state levels - the cabinet, the sectoral ministries, and the executing government agency. In addition, the study provided innovative ideas to understand the stage-gate approach within a country's public sector project management.

Public investment project execution in developing countries contributes considerably to their citizens' improvement. According to Garemo et al. (2020), the world

spends approximately $2.5 trillion a year on infrastructure; $ 3.7 trillion is the yearly estimate needed through to 2035 to keep pace with the world's projected GDP. The investment in public infrastructure may experience a high socioeconomic rate of return for developing countries. The McKinsey study found that $1 of infrastructure investment can raise GDP by 20 cents in the long run (Bielenberg et al., 2020). In contrast, failed projects usually carry a more far-reaching effect on developing countries, according to Bielenberg et al. (2020). For example, Calderón et al. (2015) found that 10% of investments resulted in only a 1% growth for developing countries. Such volatile performances can affect the business strategies linked to the successful completion of these public investment projects that rely on public investment success. Public sector agencies must have the executive capacity and capability to deliver successful programs under their purview and vital to national or sectoral development. According to Khan, Waris et al. (2019), gains from public sector investments are fully realized when they generate economic growth. However, the public policy process often challenges competing interests in the already scarce resources needed to satisfy ever-increasing and competing national needs.

While there are undoubtedly several issues, finding a balance between competing interests may sometimes be elusive and delicate. Economic growth is a function of taxation benefits in developing countries. The positive contribution gained from the state's revenue through those public infrastructure projects enhances citizens' standard of living (Chauvet & Ferry, 2020). Besides, many governments often find difficulties selecting those projects that may yield substantial returns for citizens' enhanced

livelihood. Ramlee et al. (2016) found many other considerations beyond the concept of cost, time, and scope. They observed/concluded that organizational management, quality assurance, technology and tools, stakeholder satisfaction, safety, and the environment significantly impacted public infrastructure projects' success.

While program management concerns with managing different but related projects- program management cannot fulfill its mandate without fundamentally overhauling, specifically addressing organizational structure and changes. The changes in many successful cases came with developing a flexible conceptual project management office (PMO) that brings together the project into a manageable portfolio. Determining the strategies needed to identify challenges associated with project portfolio governance to enhance growth and economic development was the subject of a study in Pakistan. In that study, Khan, Memon, and Ahmad (2019) used a quantitative study to validate the latent construct of project governance and measured the construct from three dimensions across fifteen observed items using confirmatory factor analysis (CFA). The relative importance index (RII) is Khan, Memon, and Ahmad's (2019) recommendation to examine different relative occurrence practices. Khan, Waris et al. (2019) found that the most practiced item in project governance was its portfolio alignment with organizational objectives and strategies. The traditional form of public sector management is no longer appropriate due to the associated staff competency gaps. Strategic planning for sustainability needs organizational capabilities to perform project management tasks for the achievement of organizational objectives. Such requires interaction among the project teams, management, and employees from the different business units; and an

understanding of the roles of the various stakeholders and the organization's corporate structure and culture (Khan, Memon, & Ahmad, 2019).

General Background Information on Guyana

On 26th May 1966, British Guiana became the Co-operative Republic of Guyana by achieving independence and ending over three and a half centuries of European colonization. British Guiana had comprised three separate colonies, Essequibo, Demerara, and Berbice. In 1831, the British combined the three colonies (Essequibo, Demerara, and Berbice) to form British Guiana. The country had internal self-government at its independence, except over foreign affairs, which remained under British control (Ishmael, 2005). Guyana, an Amerindian word meaning "land of many waters," is bordered north by 430-kilometers of the Atlantic Ocean. Its neighboring countries are Suriname (along the Corentyne River) to the east, Brazil to the south/southwest, and Venezuela to the west.

The International Monetary Fund projected that Guyana's economy would grow at 19% per annum from 2019 to 2023. In their estimation, the export value is projected to grow by 37% per year, imports by 14% over the corresponding period, and revenues to increase by 15% per year. As a result, government oil revenues are projected to exceed US$3 billion in 2028 in an economy with a current GDP of US$ 3.6 billion (World Economic Outlook, 2018).

Like many other developing countries, Guyana faces real economic challenges, e.g., poverty and inequality. Other challenges include critical infrastructure backlogs, which are not limited to creating new infrastructure and upgrading, refurbishing, and

rehabilitating existing infrastructure. However, as previously indicated, Lubbe (2016) found that the fiscal expenditure on infrastructure and construction generally increased aggregate demand and ultimately increased GDP. Hence, infrastructure project investment can be essential to a country's growth and economic development.

Since its launch in 2016, the INFRALATAM website has become an essential tool for deliberation on infrastructure investment in Latin America and the Caribbean. INFRALATAM provides data that supports the analytical work and decision-making of countries and governments in Latin America and the Caribbean region. Other regional and global bodies, such as the World Bank and the International Monetary Fund, will use the data provided (ECLAC, 2019). Infrastructure investment in Guyana has reportedly averaged 3.4% of GDP between 2011 and 2015, below the Latin America and Caribbean average of 3.7% (INFRALATAM, 2016). Government investment measurement of net proceeds of non-financial assets as a percentage of GDP was below the 10-year average of 8.5% but has since increased in 2015 and is projected to reach 13% of GDP in 2022 (INFRALATAM, 2016). Guyana's initial test will translate the government's newfound income into economic transformation and development agents in the medium term. Guyana's economic growth improved significantly, based primarily on the construction sector (ECLAC, 2019). Under the PSIP, a high spending rate occurred in 2018, spurring other economic activities. The construction sector grew by 11.0% in 2018, mainly because the government (traditionally) is the largest spender in the economy. The sector performance is expected to rise in response to expanding the government's PSIP (ECLAC, 2019).

The infrastructure stock for public investment is inadequate to support public service delivery and facilitate private sector growth. The country's transportation infrastructure (roads, airports, and seaports) requires substantial improvements to help the private sector's growth linkages (World Bank, 2019). The energy sector also hinders the other sectors' development. According to the Bank's Doing Business Report, high energy costs are significant obstacles to business operations, limiting the private sector's growth (World Bank, 2019).

Public Sector Investment in Guyana

Guyana faces development challenges on several fronts, including the government's institutional capacity and weaknesses in infrastructure (World Bank, 2018). Several investment programs were weak in their linkages as the investments to support national development priorities lacked strategic alignment to aid the country's development (ECLAC, 2019). Guyana's public sector investment projects' socioeconomic importance included facilities such as water and sewerage, health, education, transportation (road, ferry, aviation, port), sea defenses, national security, telecommunications, drainage, and irrigation. These social services amenities are valuable and necessary to sustain economies and support the citizens' social service activities (Lübbe, 2016).

Post-independence saw Guyana planning its strategy development, the 1972 -76 developmental plans. Since then, several strategy policies have ensued, the national development strategy (NDS), the low carbon development strategy (LCDS), and the green state development strategy as of 2020. The green state development strategy

represents the country's long-term vision. It provides a comprehensive development policy that guides public investment to 2040. Unlike the previously developed strategies, the green state strategy is broader in its outlook. It captured a more holistic view of Guyana's socioeconomic and environmental challenges, a perspective more in line with the United Nations' sustainable development goals (SDGs) (World Bank, 2018).

The green state development strategy is transformational for Guyana, and the approach combines all the critical components of the previously composed strategies in fostering sustained economic growth that is low-carbon and climate-resilient, which is consistent with that of the LCDs. However, as promised in the new government's 2020 manifesto, it reinstituted an expanded low carbon development strategy (LCDS): Broadened to include more comprehensive environmental services, water resources management, climate resilience, biodiversity, renewable energy, and marine prosperity. The expanded LCDS will also establish an international center of excellence for biological diversity to encourage cutting-edge research and develop and export educational services (News Room, 2021).

Researchers have argued that project owners need to develop and incorporate resilient, socially, and environmentally sustainable infrastructure and adapts to climate change (European Commission, 2018). Guyana's green state development strategy promoted social cohesion, good governance and carefully managed the country's finite natural resources following the green economy principles. According to Lübbe (2016), the public and private project owners in developing countries should upgrade infrastructure development and ensure sustainable and long-term economic growth.

Researchers studied public project governance. They found that government introduces its project governance frameworks - consistent with the recommendations from the project management literature and the cabinet's overall requirements (Volden & Andersen, 2018).

In principle, the Guyana government has a project cycle management division (PCMD) within the Finance Ministry, responsible for coordinating all aspects of PSIPs. However, in practice, the institutional weakness has precluded the unit's proper functioning. Each government sector deals directly with external agencies to identify the needs for specific projects (NDS, 1996). Although, implementing infrastructure projects can enhance economic growth and brings significant benefits to local communities. The overall macroeconomic impact, especially on the balance of payment and financing of public-funded projects, is not adequately reviewed. The supporting information is often not readily available (Lübbe, 2016). The duplication of donor partners' efforts has been burdensome to many developing countries. Unfortunately, the foreign-funded projects created macroeconomic consequences way beyond those countries' capacities (World Bank, 2017). The issue of pressing financial repayment commitments was of concern for Guyana. The lack of project analysis and forecasts of resource availabilities may ultimately exacerbate the problematic shortages. The government must spend its resources to reduce poverty and social inequalities (Lübbe, 2016). In addition to the short-term benefits, public investment can increase aggregate demand as a fiscal measure in the long term. Those benefits have highlighted the need for developing countries to

invest in infrastructure projects that can improve the economy irrespective of its developmental stage (Gurara et al., 2018).

Infrastructure development brings positive social change from two distinctive approaches - economic infrastructure and social infrastructure. Economic infrastructure generates income earned from the infrastructure via the end-users, according to Sillah (2018). Guyana Water Incorporation. (GWI) is an excellent example because citizens, as water consumers, pay for the water produced by GWI. The infrastructure from that social service benefits the public in the form of a public good. Sillah (2018) also found that the government pays for the social infrastructure's construction and operations. Police stations, schools, hospitals, roads, and sea defenses are examples of social infrastructure where beneficiaries do not pay directly to provide those services. Those huge investments come under growing public scrutiny as the state is under pressure to deliver such services efficiently. Lübbe (2016) opined that social incentives in developing countries boost the economy of human capital.

The relationship between infrastructure development and growth and development in an economy is the benefit obtained that surpasses the capital costs associated with building the infrastructure, according to Lübbe (2016). The state planning secretariat, a finance ministry unit responsible for overlooking infrastructure projects' economic importance and underscored the direct contribution of infrastructure development to Guyana's growth and development (World Bank, 2018). Besides, the governments also invest in infrastructure maintenance and will need to upgrade those

deteriorating infrastructures to meet economic and social objectives. Lübbe (2016) found that economic growth has a positive correlation with the citizens' social wellbeing.

Project Goals, Ethics and Communication Management

Project management aims to plan and manage each component of the project life cycle to complete the listed goals and deliverables. The project management lifecycle includes initiating, planning, executing, and project closure. The process also involves identifying and managing risks, careful resource management, smart budgeting, and clear communication across multiple teams and stakeholders. According to the Project Management Institute, organizations that underestimate project management practice reported an average of 50% more of their projects failing outright (PMI, 2018).

The changing business environments have forced organizational leadership changes, rendering inefficient those “armchair managers” who only design and communicate strategy, leaving project execution to others. The complexity accompanying globalization has rendered armchair management obsolete. The failed policies created frustration and the feeling that strategic directives were ignored. However, crowdsourcing and outsourcing, which are tenants of globalization, have caused project practitioners to tailor project management methodologies (PMI, 2017a).

A PMI study found that a lack of clear goals was the most common reason for project failure in 2017. PMI recommends that organizations home on their priorities and adequately define their project objectives (PMI, 2017a). These models should reflect the organization's position, goals, and priorities as much as possible to achieve this goal. Studies have proposed a multi-objective model for selecting the project portfolio that

maximizes efficiency and quality while minimizing the risks involved in project execution (Zaim et al., 2019).

Public-funded projects have distinctive characteristics, namely, regulatory and accountability. Those characteristics have improved public-funded projects' quality and effectiveness; they have also created different challenges for the existing competence models (Meirelles et al., 2019). The public sector modernization is a solution for achieving a social purpose that drives improved performance, transparency, and eliminating corruption while improving public services' value (PricewaterhouseCoopers, 2017). With taxpayers frequently demanding cuts in what they perceive as wasteful spending, significant public sector investments now have greater public scrutiny. Unfortunately, as the literature shows, and even in government statistics, many of these initiatives fail or at least undergo substantial difficulties and problems - often spectacularly and amid public criticism and ridicule (PricewaterhouseCoopers, 2017).

To achieve project success, the project manager must anticipate the difficulties of avoiding project delays. Those problems may be resolved by competencies in knowledge management to facilitate complex issues, according to Bakhshi et al. (2016). Typically, no two projects are the same. In one sitting, the solution (often a concern for project management methodology) is rarely successful for another situation. Although public-funded project teams strive to achieve project goals, there are still several competence gaps in elementary project management practices, according to Meirelles et al. (2019).

Another concept that captures this idea is project governance and portfolio management in uncertainties. Project governance is a multi-level phenomenon that

encompasses the control of the parent organization, contractors, suppliers, and the project combining the relationship among them in achieving the objectives (Turner and Müller, 2017). Müller et al. (2016) illustrated how project governance could affect project participants' synergies and how the adopted mechanisms can heavily influence stakeholder engagement and trust in the project. Both theorists have underscored the established relevance that exists between government and stakeholders. Project governance represents a new approach to the development of project management - strategic project management. Project governance aligns with the organization's strategic goals during project implementation by establishing and achieving optimal results in fulfilling each project and optimized effects at the organization level (Geyer et al., 2017).

Identifying and managing projects from a selected portfolio with complexity involves many factors and considerations, starting from the proposal stage until the project portfolio is finally selected. Organizations should pay particular attention to knowledge utilization to improve organizational performance (Zaim et al., 2019). Given the portfolio's project selection, the organization must prioritize those projects that align with objectives. Since projects and portfolio management include processes to collect, identify, classify, evaluate, select, prioritize, balance, and authorize as measuring success. Assessments and management tools help project managers identify the tools to enable the success factors (PMI, 2017a).

According to De Vasconcelos Gomes et al. (2019), project and portfolio managers can evaluate success by identifying or creating a research instrument (questionnaire) to gauge the processes' success. Management tools are available to collect, identify, classify,

assess, and prioritize data. While the project management field has continued to build its procedures, it still maintains its philosophical stance. Much of the mathematical modeling has advanced its trajectory, creating ever more complex solutions to more complex models. De Vasconcelos Gomes et al. (2019) stated that there should be a more systematic and empirical approach to managing uncertainties in project portfolio management. Generally, project management begins with a well-defined problem; after that, it becomes vital to grasp the issues associated with offering solutions during the growing phase. Since selecting a suitable project is significant, it is necessary to appreciate mathematical models to lead the organization towards its final goal (Wysocki, 2019).

Traditional project management starts with the assumption that each proposed project aligns with the organization's strategic goals and contributes to the organization's positive results (Cristóbal et al., 2018). Some projects entirely support the organization's strategic goals, while some only support some parts, and some generally do not support the organization's strategy. When the project outcomes are not aligned to the organization’s goals, the organization will fail to tie its projects to its business strategy and portfolio (Volden & Samset, 2017). Such occurrences are evident when managers do not accurately understand the strategy because there are not communicated (Erceg & Gulam, 2018). The importance of establishing a secure connection between clearly set strategies will aid in the correctly chosen projects, strengthening and maintaining the relationship during project implementation, according to Volden and Samset (2017).

Objectives, project culture, and organizational leadership positively affect project management performance and help establish a precise reference for leadership qualities. Project managers use the maturity of organization project management, culture, and organizational leadership to help organizations determine a roadmap to a higher maturity level, according to Khan, Waris et al. (2019). The PMI's (2017a) study found that project management efficiency and effectiveness are critical to successful project management, whether the maturity assessment involves (a) project management risk maturity, (b) organizational project management maturity, (c) project management office maturity, or (d) a simplified project management maturity, all of the assessments help project managers to evaluate the level of best practices to employed in managing projects.

While public infrastructure projects may be challenging, managers with knowledge and competencies in the requisite skill set are essential to managing the process. PMBOK's support to project managers in accomplishing project objectives aligns the projects with the organization's strategic plans (PMI, 2017a). They assumed that project managers could identify trends and generalizations that arise throughout the project (Wang et al., 2018). Public infrastructure projects have interwoven interest groups with government policies, regulatory bodies, investors' goals, and general expectations. Their success is defined by conflicting ideas coming from the various stakeholders involved.

A smart city project study done by Sandulli et al. (2017) discussed the selection process for the right public partner by considering three attributes - complementarity, commitment, and compatibility as a selection criterion and their importance for public

projects' success. Levin and Wyzalek (2015) described how project managers must manage stakeholders to deliver organizational value in uncertain times. The process involves a five-step - "stakeholder circle," applied in the project portfolio management in situations of uncertainty: (a) to identify all the stakeholders, (b) then rank them by prioritizing their relevance, (c) developing an understanding for all the stakeholders, (d) engaging them through effective communications, and (e) monitoring the engagement's effect. Every project should involve some form of stakeholder engagement, which assists in stakeholder identification, stakeholder influence, and stakeholder impact, according to Patanakul et al. (2016). The primary stakeholder engagement goal is to fully support the various project stakeholders while managing the stakeholders' agenda. The agenda is driven primarily by political, social, or financial gain (Müller et al., 2016).

Project Management Leadership

Daniel and Ugochuku (2020) defined leadership as the improvement of personnel and equipment. The leadership roles include developing quality standards, ensuring substantial delivery, and creating pride in staff's artistry. Daniel and Ugochuku found leadership characteristics such as being influential, persistent, and engaging. Therefore, project managers must possess such qualities and managerial skills for business effectiveness and project results. Dubrin (2016) describes leadership as inspiring support and confidence among the people needed to achieve organizational goals. The involvement speaks to the use of the four I's: intentions (objectives of the project), influence (people, organization, society), impact (the outcome of the project), and integrity (fair dealings in the project), ideals that leaders should model. While there is no

magical method for effective management, some required skill sets would aid the process. Skills that contribute to developing a continuous learning process that facilitates management with best practices, according to Sabrokro et al. (2018). Positive results are the outcomes from effective management skills, and the opposite is true for ineffective management.

Project managers must have the ability to make decisions, emphasizing that there is no single model for project management leadership. Project managers should adopt characteristics from different leadership styles, according to Daniel and Ugochuku (2020). In contrast, organizations may experience challenges due to the uncertainty from the fast-changing environment - the effects of globalization aid the increasingly complex project activities. Adaptation may be challenging, but a shift in leadership style may help. The lack of employees' adaptability to the process will adversely impact the project (Abdelouahab & Bouchra, 2020). The project lifecycle can serve as the basic structure for the management of projects. The different project leadership styles are available in their application at various stages of the project life cycle (Pretorius et al., 2018).

The traditional leadership of vertical relations (top-down management) was practiced for several decades and the leadership field's first practice. Shared and balanced leadership have gained prominence from the project management literature. It highlighted the differences between ‘leadership’ and ‘management’ that explain the current leadership literature trends (Pretorius et al., 2018). The expectation is that leaders must provide guidance and define the goals to their followers. Howell (2018) opined that leaders are the ones to introduce directional changes for the organization’s success,

enhanced by competitiveness to achieve the goals and objectives. From the onset, the leadership position should promote a consistent and fully integrated business unit that results in the organization's teams' aptitude to self-manage. Doing so requires team orientation, which bonds members to each other and the project's mission. Good leadership is an essentials skill for active management in decision making, staff motivation, and a lead by example method that determines organizational behavior (Northouse, 2016).

From establishing a thriving project environment, two leadership functions can emerge - performance management and team development. The project manager's leadership style can be guided towards directive and task-orientation without neglecting subordinates' relationships because it can be crucial for project success (Zhao et al., 2016). Iyer and Banerjee (2016) conducted a case study of India's infrastructure projects to determine if managerial efficiency was the key driver for completing projects. The researchers used 630 infrastructure projects between 2009 and 2013, with an average of USD 25 million per project. Projects were either classified as mechanical or civil. They evaluated the managerial efficiency using various descriptive statistics from the data source - interviewees, reviewed project documents, weekly reports, and job site visits. Additional data came from senior officials of each project to determine their level of satisfaction. Iyer and Banerjee (2016) concluded that benchmarking managerial efficiency in large-scale projects could improve efficiency. The success can be measured by including targeted dates in the project schedule and using external groups instead of peer reviews to determine the success.

Hoxha and McMahan (2019) found that the project success rate might improve leadership qualities and referenced two studies that supported their contention. First, Buengeler et al. (2016) surveyed 113 German customer service organizations and 121 leaders and found that age impacted leadership effectiveness, owing to experience. Amin and Kamal (2016) provided an exciting observation from older team members' extensive practice and work experience; they were more influential in leadership. Their membership in the team provided a commitment to the projects that is important for knowledge sharing (social capital).

Factors such as leadership, corporate processes, and culture can influence project success. However, the findings are neither tangible nor concrete to benefit project managers (Horning, 2018). The conflicting decisions give credence to the notion that environmental and situational factors influence project management effectiveness (Teller et al., 2014). All of which lends credence to the contingency theory, which suggested no single “best fit” in the style of leadership practice. The leader's effectiveness is a function of the prevailing circumstances resulting in two factors, leadership style and situational favorableness - later referred to as situational control (Saunders et al., 2015).

Managing projects has complications, especially when the moving parts cannot be quickly grasped; it becomes difficult to understand and navigate such complex environments. Cristóbal et al. (2018) provided a general overview of project management amid project complexities and argued that the traditional project management tools and techniques were wholly inadequate when managing such projects’ time, cost, and resources. For achieving project success, Levin and Wyzalek (2015) found a relationship

between project management methodology (PMM) and its impact on project governance relationships. The new complex and dynamic environments now require a new public administration approach for its management. Public project managers must rethink the traditional approach to projects - the new public administration's dispensation requires a willingness to change leadership style. The input-outcome cycle explains how the organization counteracts entropy, assuring its survival by offering an integrative and potentially systemic approach. The conventional organization theories exaggerate internal functioning while failing to understand the adaptation process, according to Ackermann and Alexander (2016).

Under the new model public administration program, the emphasis is on KPIs, with an infused private sector philosophy that supports effective public sector government deliverability. The new public management (NPM) is a significant development in public administration, with varied political and technical objectives. The model shifted public organizations away from the old rule-bound Weberian style to a scalable public sector. The NPM reform narrative includes management empowerment and active performance measurement, which draws its intellectual impulse from the public choice theory and agency theory (Ferlie, 2017). The public sector functions to satisfy the citizens' needs rather than theirs. The social goals should balance the economic ones.

Importance of Project Management

PMI defines project management as " the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements." (PMI, 2017a). The

primary project management lifecycle covers initiation, planning, execution, and closure. Project management aims to plan and manage each phase of the project's lifecycle to achieve the identified goals and deliverables. It involves identifying and managing risks, careful resource management, smart budgeting, and clear communication across multiple teams and stakeholders. Jacobs and Chase (2017) found that process integration increases the enterprise's efficiency and ability to compete in its agility, cost, and service capabilities. The integration process is primarily for a collaborative involvement of the enterprise systems with resources improving performance and quick reaction to demands (Kim & Chai, 2016).

Failed projects can quickly derail and delay initiatives and even prevent business growth because unclear focus can lead to scope creep, missed deadlines, and overspending. In recent years, Elton (2018) reported a dramatic rise in scope creep due to stakeholder expectations and shorter delivery schedules. For example, in 2017, 52% of projects completed reported scope creep at some point during the project's completion. The figures represent a notable jump of 9% from 2012, which recorded a 43% scope creep (PMI, 2017a). The strategy that organizations expect to follow can be very different from the strategy that gets realized. Regular project success appears to be challenging because of volatility, uncertainty, complexity, and ambiguity (VUCA) (Pace, 2019).

The primary goal of stakeholder engagement is to fully support the various project stakeholders while mitigating the stakeholders' agenda, which is primarily driven by political, social, or financial gain (Müller et al., 2016). Different stakeholders are accountable for varying project perspectives with a vested interest in aligning their

objectives to form a uniform approach for delivering solutions to the end-users. Without a unified approach from each stakeholder to achieve project goals, the organization may risk misalignment between organizational and project objectives. Erkul et al. (2019) highlighted stakeholders' engagement within the project's strategic intents with public needs and expectations. What becomes pronounced is an effectual effort in implementing an eventual project management methodology. Emphasizing organizations that utilized a standardized project management methodology, the PMI study found that only 26% of the participating organizations use a method throughout the organization's project management practice (PMI, 2019).

Having an interactive approach to project management can help to mitigate project risk. Project risk management is a practice that manages current and potential challenges emanating from the project stakeholders' relationships. The risk factors include ethics, supplier (monopoly behavior), methodologies, and techniques that may affect the project's goals and objectives, factors influenced by project complexity. Crispim et al. (2019) conduct a two-phase study to identify project risk management (PRM) knowledge level and project managers' current practices. They investigated the connection between critical attributes of organizational PRM maturity, risk-related methods, and project performance, with complexity as a moderating factor. In the first phase, they interviewed five project managers. They generated data through a questionnaire distributed globally to various project managers in the second phase. Crispim et al. (2019) found that PRM maturity and project complexity influence the practices employed by project managers.

Further, PRM maturity also changes the usage of risk practices moderated by project complexity. The more complex the problem, the more risk mitigation measures are needed by project management practice. Crispim et al. (2019) provide insight into PRM maturity and PRM practices; the authors used moderating factors to improve project performance. The maturity of PRM reflects the level of development of formal methods and processes. Researchers examined the factors that have impacted enterprise risk management and recommended a framework for identifying and describing enterprise risk management (Mishra et al., 2019). Resources included all assets, capabilities, organizational processes, firm attributes, and information knowledge that allow the organization to implement strategies that improve efficiency and effectiveness. External resources should be integrated into the firm's resource base, internal resources, personnel, facilities, processes and customers, suppliers, and other critical outside entities, like government entities, control bodies, and geography (Mishra et al., 2019). Those factors offer organizations opportunities they may have failed to recognize because of inefficient risk management strategies.

Further, with the responsibility of aligning projects and programs to business strategy, the enterprise project management office (EPMO) establishes and oversees the projects and programs' appropriate management governance. The EPMO is responsible for mitigating the issues of risk amid complexity. The considerations and advice help when choosing the project management (PM) maturity modeling, as the model structure can influence the assessment’s focus, according to Backlund et al. (2015). Further, the

growing complexity and uncertainty of the project managers will require them to predict and repeat their project management methodology.

According to Cristóbal et al. (2018), tailoring the established project management methodology to a specific project and organizational characteristics will allow the organization to standardize the tools, techniques, processes, and procedures used to manage the organization's project. Samiei and Habibi (2019) explain how project culture and organizational leadership can affect project management performance by establishing a precise reference as a basis for enterprise resource planning. Project management professionals will improve their project management approach's efficacy. It explains how a tailored project management methodology functions and how well the method is understood and implemented (Joslin & Müller, 2015). Organizational challenges exist not only in the selection and tailoring of a methodology but also in the manner of deployment (PMI, 2018)

Crispim et al. (2019) conducted a quantitative cluster analysis and identified six patterns in project risk management (PRM), risk identification, risk evaluation, planned actions against risks, risk monitoring, communication, and managing support tasks. The researchers found that the six patterns are helpful for organizations to determine the project maturity model and its overall success effectively. Organizations that have completed over 80% of their projects (within time and budget), and had met their business intent (outcomes), are those that have benefited highly from realization maturity (PMI, 2017a). The levels range from none or minimal best practice utilization to the highest standard of best practices utilization with continuous improvement. The higher

the level of maturity, the more effective project management becomes. Despite the benefits of maturity modeling, only 7% of the organizations surveyed in 2017 had such a practice (PMI, 2017a).

Project Management Processes

The concept of project management success and project success is utterly different in the relationship. Measuring the distinction between the two concepts explains that project management success delivers the project's scope and budget within the time constraint (Joslin & Müller, 2016). In contrast, project success involves realizing the project goals and objectives after project fulfillment (Hoxha, 2017). From the literature research and practice, three prevailing streams for project success were evident. The first was the dominant stream - a prescriptive list of critical success factors, failure factors, or risk factors that should be considered to ensure a positive project outcome (Joslin & Müller, 2016). While the risk assessment is subjected to (a) opportunism, (b) bounded rationality, and (c) subjectivity, the project manager's involvement in planning from the onset has the best potential to improve risk assessment (Firmenich, 2017). The research stream's value identifies essential preconditions and drivers of project success; however, it offers no explicit definition.

The second stream identifies other contingency variables that might impact project outcomes or require specific management intervention to mitigate potential adverse effects. Firmenich (2017) found that each project is unique. Risk should be estimated using individual assessments, including project size, project type, life cycle stage, project management complexity, and strategic versus operational mindsets. The

three streams relationship explains how the first two streams achieve project success. The third stream is concerned with the measures against which success can be judged. Joslin and Müller (2016) opined that the established criterion from project practice provides an immediate fulfillment of a project, measured against its design parameters. The parameters include schedule (time), budget (cost), scope, and quality. The literature sees this as a measurement for project management success. Gaddis (1959) determined a project to be an organization unit devoted to attaining a goal-generally the successful fulfillment of a product on time, within budget, and in conformity with deliberate review blueprints.

The best-delivered projects are those with the best-applied methodology coupled with experience and knowledgeable project managers. Managers use key performance indicators and earned value management tools to monitor the project contingencies during the project's life cycle (Eshghi et al., 2019). Implementing the project management process is an endeavor that requires commitment for strategy alignment from the top of the organization. Project management has operational tools and techniques that allow for planning and controlling project delivery. Joslin and Müller (2015) found that 22.3% of project success results from applying the relevant PMM elements throughout the project life cycle. Wali and Othman (2019) observed that project management tools' relevance has increased in construction project management because of the number of interacting elements in the environment. As management tools aid the critical path method, it helps support project managers in planning, scheduling tasks, and completing activities. Gantt charts are projections phased as activities in the project's

work breakdown structure. Wali and Othman (2019) considered the complex environment and found that tools and their impact on managing public sector projects provide a better assessment for project success. The tools also involve mathematical modeling techniques to optimize projects' duration at the level of the project's scope, time, and cost factors (Joslin & Müller, 2016). Another seemingly popular method to measure success is the balanced scorecard, a framework to measure performance from a financial and non-financial standpoint and provides a balanced view of the internal business processes, financial, learning, and customer satisfaction and growth (Singh & Sethi, 2017). When an organization's project management method is misaligned, that project has a high probability of poor quality from the inefficient operation.

Each project has five phases. Together, they represent the path a project takes from beginning to the end, generally referred to as the project's life cycle: initiating, planning, executing, controlling, and closing. Each project phase uses procedures, tools, and techniques for constant monitoring and reporting (Joslin & Müller, 2016). In the five stages of the project management life cycle, each phase will create the work breakdown structure of every activity and milestone. The KPI analysis procedure compares each sub-activity or work breakdown structure (WBS) achievements with a projected outcome (Wysocki, 2019). The use of unsuitable factors will lead organizations to mismanaged projects. The distinction between methodology elements and success factors becomes critical because the WBS methodology will identify a comprehensive and detailed WBS as the success factor measured by five functional elements: processes, tools, techniques, capability profiles, and knowledge areas (Joslin & Müller, 2015).

The traditional project management has a three-dimensional life cycle approach that provides cost, quality, and design, optimized by the project manager. Large infrastructure projects manifest high complexity, unlike contemporary project management, such as task, structural and directional, technical, and organizational complexity. Floricel et al. (2016) found a direct correlation between project complexity and project completion time. From a canonical analysis, the researchers found that complexity will reduce completion performance and increases innovation performance. Although the issues of risk and time are impacted by complex projects characterized by uncertainty, some large-scale and long-term projects experienced some delay in cost overruns (Safaei, 2020). Qazi et al. (2016) found that project completion time and cost can be affected by uncertainty issues, and the sophistication is a function of the project size, creating cost overruns.

Researchers found six elements of uncertainty that may affect both new and maintenance projects; the most common of the six are complexity, environment, capability, and information (Saunder et al., 2016). Project managers must exercise knowledge about the elements and how to manage project risks and uncertainties effectively. A helpful way is for managers to plan ahead of time and ensure the projects start early enough to identify and resolve all impediments as soon as possible (Qazi et al., 2016). The project's units can make continuous adjustments to their plans to reduce the problems (Khan, Waris, et al., 2019). Complexity affects the modeling, evaluation, and control of projects and the objectives concerning time, cost, quality, and safety (Floricel et al., 2016). They also identified specific knowledge management strategies that project

planners can use to address any complexity-concerning uncertainties (Floricel et al., 2016). For Arbabi et al. (2020), knowledge management (KM) is regarded as an essential factor in project-based organizations (PBOs), leading to organizational learning across projects. Most PBOs have recently inserted project management offices (PMOs) into their hierarchical charts to manage their projects coherently.

Rivera and Kashiwagi (2016) observed that project management is the mechanism for delivering professional services; managers are responsible for managing, directing, and controlling those projects. No one design method cures all challenges, as contingencies are inevitable. Managing risk in project portfolios requires adopting a broader outlook than the unique/individual project risk. A strong relationship between strict supervision of the dangers at each project level and the integration of risk statistics at the portfolio level allows both to enjoy a positive correlation with the overall project portfolio success (Teller et al., 2014). Risk management in projects requires understanding risk evidence, which is critical during high turbulence and portfolio dynamics. The significance is that the researchers provided functional clarifications for project risk management to reduce the likelihood of project failure (Teller et al., 2014).

Government agencies that initiate project management methodology (PMM) control budgets plan activities and ensure stringent quality. The contingency theory offers project management insights into how best to adapt a project management approach within a given environment and aids in fulfilling and satisfactory project management practice (Joslin & Müller, 2015). Project culture and organizational leadership positively

affect project management performance and help establish a precise reference as a basis for leadership qualities.

The maturity of corporate project management, culture, and organizational leadership allow project organizations to determine a roadmap to a higher maturity level (Khan, Waris, et al., 2019). Organizations that move up the project management maturity levels may have better chances of concluding their project successfully than those that do not move in the same direction (PMI, 2017a). Climbing the project management maturity levels improves project success rates in complex environmental projects. The degree of the projects' complexity determines the "ideal" level of maturity (Christoph & Spang, 2014). Climbing the project management maturity ladder may contribute to positive social change by improving the projects' environment.

The project portfolio manager's role revolves around the two most fundamental competencies (a) the portfolio strategy mapping – the management of portfolios through portfolio value, customer, process excellence, and future orientation capabilities (Levin & Wyzalek, 2015). The second competency involves working with different algorithms and financial models. The analytical ability and numerical intelligence are the balanced scorecard outcome, the tool to align projects to the organization's strategic objectives (Levin & Wyzalek, 2015). For example, some organizations struggle with finding the right mix of products to shape the relative investment based on their preferred risk profile. Tools help solve those problems by enabling the organization to derive the desired allocation mix based on existing portfolio analysis.

Business Management Strategies in Project Management

Project management is different from the general management of business because of its mission-oriented objective. There are terminated upon mission accomplishment and described as the art of directing and coordinating human and material resources throughout a project's life by using modern management techniques to achieve predetermined objectives of scope, cost, time, quality, and participation satisfaction (PMI, 2018). The general management of the business and organizations assumes a broader outlook with more excellent continuity of operations. Given the underlying similarities between project and business management, adapting modern management techniques in either realm is now the challenge (Dyer et al., 2016).

Organizations today seek to "do more with less," they now integrate IT systems to eliminate redundancy while improving efficiency. Integration tools are different from integration strategies because the foundation of an effective integration strategy is to standardize operations. If not given the various divisional components, the organization will find itself awash with duplicated functionality (Jacobs & Chase, 2017). Modern management practices and unique knowledge domains have absorbed many techniques and tools identified only for business management practice. For example, computer-based information systems and decision support systems are now standard tools for general management. Computer-based systems and subsystems are intended to help decision-makers use communications technologies, data, documents, knowledge, and models to complete decision-making tasks (Ölçer & Akyol, 2014).

The internet of things (IoT) is essentially a global network of devices that can communicate with one another and end-users through the internet. The IoT intersects with project management on team collaboration to data collection, presenting challenges at several levels (Sanchez, 2018). PPM practitioners slowly implement emerging technologies like artificial intelligence (AI) or virtual reality (VR). The lack of urgency is directly associated with the lack of digital-friendly solutions offered by PPM technology providers. Still, the expectation is that the newer generation of PPM end-users will begin applying pressure based on today's PPM tools' limitations. The following changes in the external project environment, the power structures, capabilities, skills, and standard practices may eventually cause many traditional project portfolio management practices to become obsolete. Poorly implemented changes may result in strategy misalignment within the project life cycle (Zolfaghari et al., 2017).

Project management specific to construction encompasses objectives by implementing a series of operations subject to resource constraints. Many operations research techniques, such as linear programming and network analysis, are now popularly used in the general knowledge application domains. They help resolve challenges and potential conflicts between the project's stated goals concerning scope, cost, time, quality, the limitations imposed on human material, and financial resources (Lübbe, 2016).

Conflict resolution should be at the project's onset by making the necessary tradeoffs or creating new alternatives (Wysocki, 2019). Business management emphasizes management's systematic study by distinguishing management functions in an organization, measuring each detail. A principal tenet in analyzing management along

functional lines explains how all new management activities are practiced. The manager's role is to coordinate a process of interrelated functions, which are not arbitrary nor rigidly calculated but becomes dynamic as the process unfolds. Understanding the changing dynamics of organizational structure will create the directional path for construction project management and better preparation (Uddin & Lynn, 2016).

Another tenet is that management principles are derived from an intellectual analysis of management functions. Even leaders with higher emotional intelligence quotients were more productive and experienced a higher project success rate (Maqbool et al., 2017). Creating smaller operative components for managers' jobs allows for organized management functions to improve operational efficiency. The primary management functions are performed by all managers, regardless of enterprise, activity, or hierarchical levels. The development of a management philosophy helps the manager establish relationships between human and material resources. The outcome follows an established philosophy of operation that helps managers win the subordinates' support in achieving organizational objectives (Melé, 2016). Project managers should be aware of their organization's strategic position and the other organizations involved in the project. The project manager faces the difficult task of aligning various organizations' goals and strategies to accomplish project goals.

Project Success Factors

The iron triangle’s cost, time, and scope concepts are still considered fundamental objective measurement tools for project success. Despite not being the only contributory factor, the triangle only accounts for 60% of project success, according to Serrador and

Turner (2015). Project success is a multidimensional construct that includes short-term project management success (efficiency) and long-term goals (effectiveness). The regarded distinction between the concept of project management success and project success is distinctly significant. While project management success refers to delivering the project's scope on time and within the budget, project success means accomplishing the project's objectives after the project conclusion (Hoxha, 2017). Project success is understood as achieving targets and objectives as planned but measured when the project is closed.

The project success literature centered around three fields, to identify project objectives' attainment (Waheed, 2016); evaluation of projects in terms of cost, time, and quality (Khan, Memon, & Ahmad, 2019); and strategic alignment projects to organizational objectives (Joslin & Müller, 2016). While researchers often use project success and project management success interchangeably, there are different, even though there are found to be interconnected (Radujkovic & Sjekavica, 2017). A logical deduction implies that project management generally involves controlling cost, time, and progress to assess project success criteria.

A project might still be successful because, for stakeholders, the process of finishing the project within time, scope, and budget, is critical, but other considerations can also be helpful. The end-users experience might be most effective, especially with infrastructure projects, as the benefit obtained can surpass the capital costs associated with building the infrastructure (Lübbe, 2016). In contrast, a project can be defined as an enterprise's activity to benefit the long-term (Radujkovic & Sjekavica, 2017).

Several factors can influence project success, many outside the project manager's control (Akade, (2017). As such, the sole responsibility for project success should not necessarily rest ultimately on the project manager alone. Wysocki (2018) opined that projects are subject to changing conditions, creating difficulties in scoping the project, even from the onset. The mechanistic management system offers a better perception of project requirements through the work breakdown structure (WBS), according to Wysocki (2019). Waheed (2016) contended that the perspective for recognition in project management practice comes from the regulatory body, the PMI, a guide to the project management body of knowledge (PMBOK). The purpose is to help project managers achieve project objectives and align projects with the organization's strategic plan. The PMBOK assumption is that project managers can identify patterns and generalizations throughout the project (Wang et al., 2018).

Notwithstanding PMI's contributions and authoritative influence, project sustainability is not well addressed in the popular texts containing the best practices for project management. Such observation raises the need for a more holistic and coherent view of projects in terms of the degree of fitness, given the operating environment of those projects and the general society they operate (Armenia et al., 2019). The researchers identified five dimensions as the principal research domains. They considered critical factors for integrating a sustainable approach for project management practices (Armenia et al., 2019). There are as follows, (a) corporate policies and practices, (b) resource management, (c) life cycle orientation, (d) stakeholders' engagement, and (e) organizational learning. The researchers found positive trends towards integrated project

management processes using sustainable management in the project's process life cycle. Sustainability influenced all of the standard practices of project management knowledge concerning time, cost, quality, and project risk (Armenia et al., 2019).

Joslin and Müller (2016) examined the link between project management methodology (PMM), project success, and its impact on project governance relationships. Joslin and Müller's (2016) sampling method provided a balance among the continents, and they targeted professionals who work in professional organizations worldwide. The sampled approach resulted in better responses because they were more interested in their profession than their employers. This sampling approach also has its limitation; PMI professionals' limited respondents' choice to only members of professional project management bodies, creating a bias. Nevertheless, the researchers found that PMM was initiated by government agencies, in an effort at controlling budgets, for the planning of activities, and to ensure stringent quality. Joslin and Müller (2016) found that methodologies should evolve to provide the best application within the project environment, using new tools and planning techniques, including ICT.

Best Practices in Project Management

Patanakul et al. (2016) found six essential characteristics as critical success factors for governmental projects to succeed. They achieve specific and attainable outcomes, effective product design, stakeholder engagement, integrated project schedule, legislative alignment, and project standards. Being excellent at managing projects is usually a matter of grasping project management best practices. The "best practices" are generally obtained from project management methodologies, international standards,

industry standards from conventions, and the organizations' guidelines from past project lessons learned. Research tells us that skilled, trained, and experienced project managers increase the likelihood of project success, meeting original goals, and delivering on business intent (PMI, 2018). Often, these "best practices" may vary from organization to organization. Some, however, are applicable across organizations and can fundamentally enhance project performance.

Researchers have adopted a practice-based approach to study project and project portfolio management and encourage researchers to follow this call (Clegg et al., 2018). Practice-based research has three views: Phenomenon, perspective, and philosophy. The phenomenon view encompasses what happens as opposed to what to expect. The perspective view includes a unique way of observing the participant. The philosophy view provides for the misconception of social reality's perception of observing the participant (Clegg et al., 2018). The phenomenon practice is used by seasoned and skilled project practitioners to combat project complexity challenges. They demonstrated the alignment of project processes with a business management strategy using tools, techniques, and procedures for successful alignment (Floricel et al., 2016).

A best practice is to maximize human resources to gain efficiency by creating a "product team" - experts trained in specific repetitive tasks. Leaders need to select and communicate the strategy to make the most efficient use of the resources (Samáková et al., 2018). The product team should not be affiliated with any particular project or organization. Instead, they would move from project to project, performing just the target task for product management. In another project, best practice involves a risk

management response team. Four options are available, mitigation, acceptance, transfer, or do nothing. The team should comprise experienced members with wide-ranging access to plan, monitor, and control the project's risks by thinking of worst-case scenarios and develop contingency plans (Crispim et al., 2019).

Leadership capabilities are significant when dealing with sophisticated resources - as in an agency setting. While a schedule cannot continually develop creative work to realize 100% perfection every time, leadership traits, motivation, and empathy can create teams' talent for efficiency (Northouse, 2019). Portfolio management allows organizations to make the most efficient use of resources to understand their investments' benefits. It helps ensure credibility and increased accountability to stakeholders and enhances the ability to make timely and strategic changes. Amongst the more popular form of project management methodologies in practice is agile; however, the waterfall, hybrid, critical path method, and critical chain project management are also considered. The agile methodology is the most utilized in short development cycles focusing on continuous improvement in developing a product or service (Loiro et al., 2019). The benefit from constant improvement requires a narrow focus on one primary goal achievement, and to stay on schedule while keeping costs low is now practice with the use of technology (Berggren, 2019). The process of aligning project and program activities with ICT strategy helps with being agile, whose application is primarily within the software development industry (Loiro et al., 2019). Today, the process has become useful across most industries; being agile is more comfortable to manage change when obstacles arise.

A common factor in failed projects is a lack of collective understanding of stakeholders' requirements. Both the project team and client have differing views of the project's scope. The identified characteristics of stakeholder engagement and project complexity are similar to the concept of governance of project portfolio management that deals with multiple programs involving a multi-project environment (Levin, & Wyzalek, 2015). Stakeholders' involvement is critical; the project can easily slip into a pattern of reduced communication when dealing with the client, especially when perceived as "happy." However, unless the meetings are not regular, one cannot know the client's satisfaction. The dominant driver of projects meeting their original goals is an actively engaged sponsor (PMI, 2018). From the project manager's perspective, frequent stakeholder engagement gives the feeling of open communication and that their best interests are served (Loiro et al., 2019). To process is formalized with regular client status meetings - at least weekly, it will keep everyone engaged and on the same page. The project momentum will stay steady, and success is more likely (PMI, 2018).

Organizations can focus heavily on their project managers' technical competencies (e.g., relying on formal PM knowledge and certifications). Although skilled, trained, and experienced project managers increase the likelihood of project success, meet original goals, and deliver on business intent (PMI, 2018). In effect, the "softer" side of project management - leadership, empathy, people skills will suffer. Given how heavily project managers interface with clients and internal stakeholders, they strain their leadership competencies beside their technical ones. The most successful change management approaches reflect leaders' experiences who apply a deeper

understanding of people and systems supported with an organization's culture, comparable to the McKinsey 7-S Model (Morgan, 2015).

The project management office develops and implements a process that ensures everything works as planned to succeed with project portfolio management. The alignment needs to be within the formulated strategic implementation in large projects, including the project managers and executive management (Erceg & Gukam, 2018). Those large projects have project management offices or enterprise project management offices which can (a) identify all existing and potential projects, (b) determine how each project will impact organization-wide strategy, (c) prioritize each project, (d) allocate resources, and (e) adjust project strategy as required. The realization of the organization's objectives allows for the programs and projects to be further arranged under a portfolio strategy undertaken by the project management office (PMO). PMOs are used to improve the communication and interactions between the organization and customers (PMI, 2018). Besides, PMO may consolidate projects with similarities for operational planning, allowing for alignment with business strategy (Dyer et al., 2016). Portfolio management is a way to operationalize strategy by aligning project policies and procedures with the organization's goals.

Alignment of Project Management with Organizational Strategies

According to Zolfaghari et al. (2017), alignment is an effort that supports organizational success; it involves the collective alliance of strategies from three levels, corporate, business, and functional, to maximize outcomes. In general, alignment is the effort to agree on the main goal by directing all parts and functions of an organization

towards the same objectives. Understanding business strategy at all levels of an organization becomes a significant task of an effective project management process in alignment (Erceg & Gukam, 2018). When the alignment is substantial, both the organization and project team's effectiveness will increase. Still, when the alignment is weak, the challenge is misalignment when the teams cannot focus on the main goal and objectives (PMI, 2016). The researcher found that organizational strategies represent approximately 37% of the common factor associated with project failure (PMI, 2017a). The contention is that successful organizations are those organizations that achieve proper alignment between these elements. Their mission should translate into the business and the strategic plan to include workers, departments, strategies, and business processes.

The critical issue in the process-driven strategy alignment model is that the flow from the inception point from the business process to the project management process is linear. When the strategic objectives change due to changes in the project's internal and external environment, misalignment from business to project strategy could occur. Project effectiveness can be achieved by aligning project management priorities with organizational strategy (Zolfaghari et al., 2017). The creation of alignment between projects and organizational strategy starts from the project selection phase continuing throughout the project lifecycle up to the project implementation. Zolfaghari et al. (2019) categorized the efforts into three stages: allocation, cascading, and autonomy; the researchers focused on the last stage. Zolfaghari et al. aligned the construct between project strategy and business strategy had posed a limitation because they could only

assign three discrete states to the alignment (low, medium, and high). Zolfaghari et al. suggested that further study can measure the alignment construct for more reliable results. While Zolfaghari et al. (2019) established significant quantitative research alignment, my qualitative approach differs. From the project selection phase and throughout the project's lifecycle, right through to the project completion stage.

The traditional literature on aligning project management with business strategy is vague. Most studies linked the business strategy with project management through a project selection process, seen as part of the alignment process (e.g., Baker, 1974). The more common approach is project portfolio management (PPM), another concept suggested in the literature to ensure project management and strategic alignment. Volden and Samset (2017) presented their findings on public investment governance on megaprojects and found a pathway to sustainable development for developing countries. They found that most megaprojects were successful because project managers performed quality assurance at the project's onset. Sustainability can manage the project life cycle to positively impact cost, time, and project risk (Armenia et al., 2019).

Pinto and Winch (2016) discussed designing the projects' front-end to suit the business environment. From the findings, the pointed conclusion is how dynamic project portfolio management has grown. The progression has become a dynamic decision-making process through which an organization can update and revise its active projects list (Pinto & Winch, 2016). The organization's choice of business strategy drives their PPM's method, the significant purposes of selecting and prioritizing projects. The study by Berggren (2019) introduces another idea of innovation through the sequential learning

of project managers, who can deploy ambidextrous leadership skills in achieving project innovation. The front-end project design was critical for managing the business environment as an innovation measure in a challenging environment.

The organizational project management models discussed above are now well mature in their applications. Nevertheless, the criticisms were ineffective as many firms continued to face obstacles in improving their project management practices. An alternative methodology was developed from the literature review, and the proposal's arguments were analyzed. Mossalam and Arafa (2016) determined the awareness and level of implementing project-level benefits management versus other organizational governance practices across different organizations. Aubry et al. (2019) investigated how benefits management evolved in organizations by considering project actors' experience based on five large-scale organizations as they engage in the activity. Aubry et al. (2019) provided valuable consideration for understanding the “good practice approach” to benefit project management. They suggested a strong relationship between projects and their benefits to be measured throughout the projects' execution.

Similarly, in a unique approach, researchers used a case study of an infrastructure megaproject that concerns the construction management of a 50-year-old American bridge. Eskerod et al. (2018) found that exploiting all project opportunities will increase project benefits. Such a requirement involves all categories of stakeholders. While some project-related opportunities may take a while before enjoying the related benefits, celebrating the successes stimulates the project and creates opportunities to further project benefits. Eskerod et al. (2018) contributed to the gap within the literature on the

phenomenon “project opportunity exploitation,” even though the case study was a “rare species.”

The recognition of strategic importance in project management is rapidly accelerating. A strong reason for the acceleration is that aligning project management with business strategy can significantly enhance goal achievements (PMI, 2017). What is now emerging is the project management office's role and the enterprise project management office (EPMO), which offers a broader business-wide responsibility. The EPMO and PMO benefits were highlighted in the survey, as 27% more projects were completed successfully, and 42% fewer projects were without scope creep (PMI, 2017). The strategic alignment concept stresses project management goals and implementation plans with the business's goals and organizational strategic goals in a dynamic and uncertain environment. Project managers with competencies in the knowledge and process areas are critical to successfully managing a project (PMI, 2017).

The research field concerning the idea of strategic alignment in various fields of management is growing. Zolfaghari et al. (2017) established alignment between the project life cycle stages - allocation, cascading, and autonomy. Other researchers found a correlative relationship between the organizational business and function (e.g., Erceg & Gukam, 2018). Since project management is similar to these functional strategies, the logical deduction is for project management alignment with the business strategy because of the critical role in project success in organizations. Projects aligned to the organization’s strategy are completed more often than the misaligned projects (PMI, 2016). Aggressive project sponsors also use their influence within an organization to

actively overcome challenges by communicating the project's alignment to strategy, removing the bottleneck, and driving organizational change. Project momentum will stay steady with this consistent engagement and support, and success is more likely (PMI, 2018).

While many organizations, including governments, suffer from misaligned projects, the lack of a systematic approach to align project management with the business strategy is evident. The empirical literature that offers advice on how to achieve alignment is scanty. The planning strategy points should represent the changes in an organization's long-term direction. Researchers found that less than 50% of the studied organizations have enterprise project management offices (EPMO). However, only 44% of those EPMOs have aligned organizational strategies (PMI, 2016). While projects are viewed as building blocks for organizational strategy, they are not recognized functionally. However, they are rather perceived as a business process, achieving a project management /business strategy alignment even more complicated, according to Wang et al. (2018).

Wang et al. (2018) stated that the PMBOK's purpose is to help project managers achieve their project objectives by aligning them with the organization's strategic plans. PMBOK assumes that project managers can identify patterns and generalizations that occur throughout the project. The literature suggested that PMO professionals hold significant knowledge to ensure alignment and focus on achieving their vision, similar to the EPMO. While PMO's original purpose was to manage programs and project specified deliverables, they did not necessarily have a secure link with the high-level business

objectives. Their effectiveness is increasingly measured by mapping a direct line back to the overall business performance's success (PMI, 2018). A centralized function should be operable at the strategic level with the executives.

Organizations are now using the project stage-gates approach to adapt and maintain the alignment during the project's execution phase (Volden & Andersen, 2018). The mediating process level provides strategic feedback resulting from environmental changes, leading to an “emergent strategy” (Mintzberg, 1994). The strategy was never envisaged in the plans but rather emerged from a stream of managerial decisions over time. Volden and Andersen’s (2018) approach is the first step toward a better understanding of public project governance as a hierarchical system and the relationship between project owners on three levels, the cabinet, the sectoral ministry, and the government agency- project execution unit (PEU). Considering the varying government roles becomes quite helpful in understanding the stage-gate within a country’s public sector project management. Volden and Andersen (2018) studied public project governance in various ministries and agencies in Norway. Following the introduction of a structure that seeks support at the highest government level, the cabinet approves the most significant projects. The study methodology was designed to assess the project governance frameworks and applied to state-funded investment projects in selected sectors. The researchers found that all agencies introduced their project governance frameworks, consistent with the project management literature recommendations and the cabinet’s overall requirements. By contrast, only one ministry has taken a formalized role

as the project owner. After the cabinet's no-objections, governance tasks get delegated to the subordinate agencies (Volden & Andersen, 2018).

Project, Programs, and Portfolio Management

Project portfolio management (PPM) illustrates how best to accomplish those interrelations and dependencies that connect projects. PPM offers a pictorial view of all grouped projects -past, present, and future, and provides an analysis that optimizes the prioritization and sequencing of projects to maximize the organization's return rate (Armenia et al., 2019). Portfolios of programs, projects, and operations, when created, are used to achieve strategic goals and objectives. Project portfolio managers require different skills to project managers. According to Levin and Wyzalek (2015), project portfolio practice revolves around two crucial competencies. They allow for strategy mapping when managing portfolios through portfolio value, customer, process excellence, and future orientation capabilities.

Projects and programs within a portfolio generate value in an organization's production capability, and when completed, the projects become operational (Berzisa & Rasnacis, 2017). An organization can then translate its vision and mission into a strategic plan with strategic goals and objectives. The organizations' departments also have their strategic plan that supports the organization's initiatives. These initiatives are grouped into portfolios and create portfolios of programs, projects, and operations executed over a pre-determined period (Zolfaghari et al., 2017). A portfolio will link projects and programs to the organization's strategic plan. Some organizations struggle with finding the appropriate mix of products for their investment based on the risk profile. Moreover,

tools are available to help solve the problems and enable the organization to derive the desired allocation mix based on existing portfolio analysis (Zolfaghari et al., 2017).

Berzisa and Rasnacis (2017) presented a new source that successfully implemented a tailored agile PMM based on a project's specific elements and the organization. The method included people, training, customers, team size, team capability, team motivation, company culture, planning, and scheduling. The process included the best practices from change management, methodology adaptation, and execution while using sociometric and motivation research methods that analyzed the project team's role in implementing the PMM. The researchers presented a case study where the procedure was employed and analyzed in a real-world scenario. The researchers found that the team experienced greater cohesion, improved risk management, and increased communications due to the implemented agile PMM.

Within programs and portfolios, projects are a means of achieving organizational strategy and objectives. In turn, projects will have deliverables with control accounts, including work packages with work activities throughout the project (work breakdown structure). Their assumed risk groups them; for example, at the level of the executive, the risk responsibilities range from (a) the steering committee-level presentations, (b) the portfolio management milestone plans, (c) resource allocation, and (d) accepting responsibility for deliverables and timeline engagements. Levin and Wyzalek's (2015) model helps organizations view strategy in an integrated and systematic way. Generally, portfolio managers usually develop management standards to guide the portfolio and keep a high-level overview of everything. The projects with their deliverables (outcomes)

provide the day-to-day goals and execute the strategic objectives. Projects are undertaken to accomplish an organization's strategic plan's business objectives, albeit directly or indirectly. The PMBOK guide also regards projects as an authorized activity derived from multiple sets of strategic considerations (Project Management Institute, 2017b).

Ng (2018) reviewed several widely used project management frameworks and selected three (PMBOK, PRINCE2, and ITIL). The objectives of the review were twofold. First, it allows for a quick understanding of the widely used project management frameworks. Second, it considered varying frameworks for complementary applications, each at different phases of a project life cycle to address the specific needs. The researcher provided an example of how the methodologies could be combined and further tailored to determine similarities, differences, and gaps within each method. Using a real-life case study of an organization with 2,000 employees, the researcher described organizational PMM that comprises stages and varying management involvement levels. Once the business case is justified, the project team then moves to the acquisition and development phase of the PMM, leveraging PMI's PMBOK processes and techniques. As the project moves to operations and support, the PMM will include the ITIL components to build a management plan. The components provide specific configuration and asset management, incident management, and change management. Ng (2018) concludes that one methodology rarely sufficed because of each project's uniqueness, the comparative analysis, the real-life case study, and the feedback obtained from project management practitioners. Instead, the researcher opined that tailoring and combining relevant elements of the traditional PMMs be reworked to improve project success.

Besides, adding the most up-to-date tools, technologies, skills, and knowledge areas to leverage in increasingly complex project environments.

Projects can enjoy successful completion in numerous ways. However, to think of the most successful project management methodologies, methods, and frameworks requires an open mind because there are always changes. A relationship between project management methodology (PMM) results in project success and impacts project governance relationships (Levin & Wyzalek, 2015). New concepts appear all the time, and an entire sequence of methods, tools, and techniques lies behind each successful project. Bakhshi et al. (2016) found that the project benefits can map to the strategic objectives, especially for complex problems, as competencies in the knowledge facilitate complex issue resolutions. Investigations have determined the awareness and level of project-level benefits management versus other organizational governance practices across different organizations (Mossalam & Arafa, 2016). The researchers proposed roles for the project manager to realize benefits management. To add confidence, a real-life scenario of implementation for challenges illustrated a successful implementation benefited from the realization concept (Mossalam & Arafa, 2016). The benefits realization management process is compatible with the process groups of PMBOK. They enable the organization to cascade the responsibilities of delivering values at the project manager level (Project Management Institute, 2017b).

As a practice tool for implementation, benefits measures play an active role in monitoring the potential project benefits. Mossalam and Arafa (2016) showed a superficial implementation level of benefits management practices at the project level

compared to benefits at higher levels (programs & portfolios) and among other organizational practices and systems (quality management, excellence, risks, performance, among others). In the current methods, 40% of surveyed organizations possess benefits management practices versus 70% of the organization for project management practices, which indicated the relatively low performance of benefits management (PMI, 2017). The findings help enlarge the project manager's responsibilities to realize benefits, suggesting a mechanism for managing these benefits through benefits register, benefits realization plan, measures, KPIs, and closure. Therefore, a portfolio manager needs to be less focused on individual projects and more on the big picture approach: Identify opportunities for success by mitigating risks to achieve the objectives.

Summary and Transition

Section 1 discussed the study's background, the problem statement, the purpose of the study, the research question, and the study's conceptual framework. I also presented the study's nature, defined terms, assumptions, limitations, delimitations, and the study's significance. The literature review discussed the strategic management concepts concerning public sector project managers and the factors that align project outcomes with government strategies to maximize project success. Section 2 includes the purpose statement, the researcher's role, participants, research method and design, population and sampling, ethical research, data collection technique, data organization techniques, data analysis, and reliability and validity. In section 3, I presented the findings, application to

professional practice, implications for social change, recommendations for action and future research, reflections, and a conclusion.

Section 2: The Project

In this section, I reiterate the research's purpose statement, present the researcher's role in the qualitative study, and identify the participants. Further, I explain the methodology and the research design and define the population and the sampling size. In addition to offering the highlights for ethical research consideration, I explain the data collection method. Finally, I present the study's technique to ensure the research's reliability and validity.

Purpose Statement

The purpose of this qualitative multiple case study was to explore effective strategies that public sector project managers used to align the project outcomes with government strategies that maximized project performance. The specific population group comprised public sector investment project managers who successfully aligned the project outcomes with government strategies and worked for four project-based units within the geographic administrative region of Demerara/ Mahaica (Region 4), Guyana. They participated in semistructured interviews that provided their perspectives and experiences in project management, which formed the source of the data collection. A project is determined aligned if 80% of its expected outcomes are aligned with the organizational strategy (PMI, 2017). The examined project reports verified successful alignment from three constructs; (a) identification of the set goals from the baseline studies and how they were captured within the project goals on a percentage basis; (b) exploration of each of the alignment factors of cost, time, and budget; and (c) examination of the end user's satisfaction from stated goals of both the project and

organization, all from a compliance rate of at least 80%. The study may contribute to positive social change if public sector project managers can use the study findings to create a community of successful project practitioners to implement projects better.

Role of the Researcher

Unlike quantitative research, in which the participants function autonomously, and the researcher's role is distant from the studied population, qualitative research necessitates that the researcher determines accuracy and trustworthiness while serving as the primary data collection instrument (Alpi & Evans, 2019). The process entails a researcher's thorough understanding of the research phenomenon to aid a meaningful research inquiry while making a conscious effort not to influence the participants (Marshall & Rossman, 2014). The researcher's role is to understand social constructivism's principles. The intention was to create a collaborative nature of learning by linking the literature with the interviewees' self-discovery from the collected data —a belief that social processes are sustainable and that people construct knowledge in their daily social interactions (Merriam & Tisdell, 2015).

Researchers should be objective in their approach because subjectivity negatively affects the quality of the research. For example, Karagiozis (2018) stipulated that researchers should avoid forced opinions or thrusting their views on the participants' answers. Such meddling could invalidate the study. Researchers should actively listen to the participants and build trust and rapport while demonstrating empathy (Kenno et al., 2017). Researchers have a social responsibility to conduct the study ethically, preserve the research, fully comply with the code of ethics and avert biases (Karagiozis, 2018).

As the researcher, I follow the protocols of the *Belmont Report* (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). The report presented three fundamentally ethical principles, autonomy, beneficence, and justice (Miracle, 2016). Autonomy explains "the respect of person" as the first moral principle that speaks to an individual's fundamental right to choose whether to participate (Yin, 2018). Autonomy allows for a detailed comprehension of the requested engagement and reasonable judgments about making a noncoerced decision (Roth et al., 2018). Regarding the individuals' natural ability to do what they choose—the respect of person—Yin (2018) found in human research that not every individual can intentionally apply independence and control. Diligence and due care must be practiced to ensure no influence, coercion, or exogenous influences are placed on the participants in their responses (Glenna et al., 2019).

Researchers should not find themselves in any conflicting situations; in fact, they must show due diligence in mitigating personal bias in data collection and verification (Karagiozis, 2018). A generalized idea in qualitative research is to ascertain a relationship between (a) the research question, (b) the observed data, and (c) the conclusions (Green & Salkind, 2017). Therefore, the researcher should try to mitigate bias as much as possible. Such efforts will ensure that the study overcomes design scrutiny with a repeatable method that produces the same results using different samples (Walden University, 2019).

I used interview protocols, member checking and review, data saturation, and triangulation, in addition to the carefully constructed interview questions. I ensured that

the analyzed data was primarily inductive, allotting meaning developed from the data rather than the more hypothetical-deductive quantitative research approach. Researchers create an interactive dialogue with the participants to enhance the perspective and derive more into a social context (Merriam & Tisdell, 2015). Each participant's uniqueness was maintained to ensure each participant realized an independent and unique case study that allowed for case comparison (see Yin, 2018). In qualitative research, researchers should build sufficient trust with participants so that their data set can describe strictly authentic and rich meanings, experiences, and perceptions (Anderson, 2017).

An interactive dialogue helps develop an intensive response and add a more insightful approach to the social context (Merriam & Tisdell, 2015). Furthermore, given the uniqueness of the participants, a sustainable method was required to ensure each participant represented an independent and unique case that provided the opportunity for case comparison, following Yin (2018). Finally, I conducted diligent and careful verification of interview questions and data analysis methods to ensure comprehensive data collection and analysis. The interview protocols, member checking and review, data saturation, and triangulation ensured that the data analysis was primarily inductive, allowing meaning to develop from the data.

Participants

Sanjari et al. (2014) opined that the participants must best fit the qualitative researcher's criterion under investigation. The selected participants for this study were project practitioners who experienced the phenomena and articulated their knowledge in successful project outcomes alignment. My role was to select those appropriate

participants who had the expertise and competence to answer the interview questions and ensure access to those participants (see Saunders et al., 2016). I interviewed the participants with the requisite competence to answer the overreaching research question.

To gain admittance to participants, I first identified those organizations whose affiliation to public sector investment projects were known to have a pool of experienced project practitioners. According to Yin (2018), the participants can come from ministries, agencies, and at the local government levels in such circumstances. Given the nature of the study, I found the participating pool to be public officials. Participants with positions of power in those organizations are often the gatekeepers of valuable information and a potential source of rich data for researchers (Adhabi & Anozie, 2017). Therefore, I contacted the agencies' principles to gain approval and an agreement for cooperation. This process promised access to the project leaders in the agencies with the sought-after information and permission to interview them. I had anticipated challenges with accessing participants, and I sought a high level of engagement with the organization's leadership. In the process, I had expected some leaders to exercise elite behavior under their positions of authority—politicians, heads of agencies, chief executives' officers, permanent secretaries, and senior civil servants—making this group challenging to access.

Often elites are more inaccessible and surrounded by gatekeepers, and I managed to gain access because I exercised much patience, planned carefully, and allotted plenty of time for the process, as suggested by Mikecz (2012). The strategy for gaining access to these government officials had involved developing a rapport for a working relationship

with the participants (see Prior, 2019). I was thoroughly prepared to anticipate a challenge on my research topic, its relevance, and other questions. Sometimes elites will inadvertently or deliberately avoid answering a problem, especially if they are media savvy. An excellent strategy I applied was the proper interview techniques that allowed for elite personality control. It allowed for a better assessment with qualitative interviews and greater credibility. It kept the respondent from telling partial or imaginative narratives (Harvey, 2011).

An acceptable interviewee response is a sign of relaxation, indicating that the respondent may open up networking opportunities. Prior (2018) concluded that developing a good rapport provides networking opportunities before attempting complicated or awkward questions. The rapport consists of a healthy process of giving and receiving information between participant and researcher, noting that the researcher can connect with participants to share their experiences. The aim is to demonstrate a skilled researcher's attributes by asking the right questions while staying adaptive, being a good listener, having a firm grasp on the issues under consideration, and conducting the research ethically (Yin, 2018). I endeavored to such a practice.

Obtaining the appropriate participants for interview-based research is a critical element of successful research (Kenno et al., 2017). To ensure my conduct was of the highest ethical standard for the study, I provided the participant with a comprehensive overview of the research. Each received an informed consent form that invited them to confirm their participation. Whether or not a participant wishes to partake in the research, informed consent is a process to communicate honestly and thoroughly about the

investigation (Simon et al., 2018). The consent form featured the following details: the eligibility criteria, the purpose of the study, the data collection procedures, the voluntary nature of the study, the risks and benefits of participating in the survey, compensation for taking part in the study, measures to protect the privacy of the participants and the confidentiality of the collected dataset, a declaration on conflicts of interest, and contact details for further information. All help cultivate a rapport with participants in qualitative interviews and enhance the researcher's access to the interviewees' stories, according to Prior (2018).

The data was collected after receiving approval from Walden University's institutional review board (IRB; approval number 07-08-21-0984939). Gaining the IRB approval expedited the primary data collection process because the IRB protects participants' welfare and ensures the research's ethical conduct (Henry et al., 2016). In addition, the IRB approval assures the prospective participants of the study's appropriateness in its design. Participation in this study involved minimal personal risks while offering benefits to stakeholders.

The purposive sampling method explained how the four eligible organizations' participant was identified. Each was chosen from a different organization with success in managing a public infrastructure/construction project. The purposive sampling technique is appropriate for case studies. Purposive sampling follows a unique line of questioning; for example, do participants share the researcher's phenomenon of interest? (Englander, 2016; Patton, 2015). Purposive sampling requires examining the population's specific characteristics - an investigation of participants based on their judgment. Researchers

then handpick participants based on their knowledge and experience (Kandola et al., 2014).

For my study, because my population comes from state agencies, I used two approaches. First, peruse the project documents to identify which projects satisfy the selection criterion, with an 80% compliance rate. The verification of successful alignment met from three constructs, (a) identification of the set goals from the baseline studies and how they were captured within the project goals on a percentage basis; (b) exploration of each of the alignment factors of cost, time, and budget; and (c) examination of the end user's satisfaction from stated goals of both the project and organization. Second, the first criteria' fulfillment easily allowed for identifying successful managers. The request was made to the agency's executive for a list of those practitioners to form the sample. Researchers who use snowball sampling allow one or more participants to identify other participants (Saunders et al., 2016).

Qualitative researchers select a sample of participants who generally provide rich information about a phenomenon that positively affects others' lives (Rossetto, 2014). The eligibility criteria for selection as a participant were projects managers who successfully aligned project outcomes with government’s strategies and those who satisfy the requirements of (a) serving as the project manager, (b) serving as the program or portfolio manager, (c) serving as a functional manager, and (d) work in a public infrastructure unit for a minimum of 5 years. In addition, I interviewed those who agreed to participate voluntarily, from which I achieved data saturation.

Considering the COVID-19 circumstances, researchers may conduct electronic interviews in real-time using computer-aided technologies via the internet (Saunders et al., 2016). Skype and Zoom are easily accessible and are of free service. The researcher interacted audiovisually and held live conversations via the internet, which provided convenience across time and space in any physically remote location. Skype and Zoom are convenient and safe alternatives because the interviewer and the respondent can interact at their choice (Archibald et al., 2019). I conducted the interviews via Skype and Zoom, convenient to the participants in line with the interview protocol.

Research Method and Design

Three methodologies are available in scholarly research. Researchers use them to investigate problems and determine the method's appropriateness and design suitable for any research, qualitative, quantitative, and mixed methods (Queiros et al., 2017). This section will include a discussion on the research method and research design.

Research Method

In qualitative research, the participants for consideration must best fit the criterion under investigation (Sanjari et al., 2014). For example, selecting those participants who have experienced the phenomena can articulate their experiences and knowledge. The researcher’s role was to select those appropriate participants who have the expertise and competence to answer the interview questions and ensure they gain access to the substantive details (Saunders et al., 2016). The participants in the study have the competence to provide answers to the overreaching research question.

The strategy used to gain admittance to participants requires identifying the organizations affiliated with public sector investment projects and having a pool of experienced and successful project practitioners. In such circumstances, the participants can come from agencies and state and local levels of government, according to Yin (2018). Given my study's nature, I interviewed public officials whose participants are of power positions within the organizations. They are often the gatekeepers of valuable information, a potential source of rich data for researchers (Adhabi & Anozie, 2017). I anticipated challenges with accessing some participants; those in a privileged position- usually professionals or elected politicians concerning a particular activity or area of policies- often directly influence their domain. With such expectation, a certain level of professionalism is anticipated in their work-related interactions, including the researcher. The central argument for preparedness remains that no matter how sound is the methodology concerning elite interviews, the success still depends on the researcher's ability to undertake them effectively.

The strategy for gaining access to government officials involves developing a rapport for a working relationship with the participants, according to Prior (2018). Trust is also crucial to the process, especially when some questions might be controversial or ask participants to think critically about their organization or activity. Building trust and rapport can take time; therefore, building a collegial position early in the interview is necessary. I did not open up any controversial questions that might unsettle the participants, resulting in the interview termination. Instead, I started by asking the participants to outline their background and experience in government projects briefly. It

allowed the participants to speak broadly on “their terms” while getting used to the interview situation and my presence. Then, I provided the participant with a comprehensive overview of the study. I selected the qualitative method because of my interest in business strategy alignment for project management fulfillment.

Qualitative research offers four robust methods, (a) ethnography, (b) focus groups, (c) phenomenology, and (d) case study, explained in their best application. Researchers use ethnography to observed phenomenon solely from the participant’s perspective, through the submersion in the participant’s environment (Queiros et al., 2017). Immersion was not my aim, and neither was understanding cultural phenomena from the participant’s perspective. Therefore, ethnography did not meet the research requirements. Focus groups can be a valuable source of knowledge but problematic for novice researchers who can find the participating group challenging to motivate and manage (Queiros et al., 2017). Given the complexities of group dynamics and being a novice researcher, focus groups were not a suitable design option.

Phenomenological researchers are concerned with individual research participants' lived experiences versus abstract knowledge or reflection (Berglund, 2015). Researchers use the phenomenological perspective to study individuals’ perceptions and give meaningful human experiences concerning the events (Neubauer et al., 2019). I did not aim to explore what appears in consciousness or pursue ordinary insights into human experiences; therefore, phenomenology did not meet the requirements. Researchers use the case study to understand the intricate complexity and peculiarities of a distinct case investigation of an organization considered worthy of analysis (Park & Park, 2016). A

case study helps understand a complex issue or object involving an up-close, in-depth, and detailed investigation of a study subject and its contextual position. It can extend experience or add strength to the existing knowledge through previous research. The case study was my choice to explore in-depth activities of the phenomenon from a process that project practitioners successfully used within a specific system or context for projects and government strategy alignment.

Research Design

Case studies are ideal for understanding organizational and business processes. Because the procedures vary across institutional contexts, such an inquiry would require specific approaches. While the research design links the data to the research question, qualitative research could improve value through rigorous from a well-structured research design. The research context or boundary is well defined by the researcher, according to Van den Berg Struwig (2017). Case study research approach could either be a single case study or a multiple case study. Researchers have applied a single case study to explore and understand a phenomenon using a unique or extreme interest case; the research question should guide the design (Morse, 2015). The researcher's choice of study involves using the multiple case study because of its appropriateness in exploring the contemporary phenomenon in a real-life setting, as Yin (2018) stated. Further, Yin observed the usefulness where the boundaries between the event and context setting are not established and are unknown.

The multiple-case design is skewed to provide replication logic; each case could produce similar or different data and perhaps predictable findings. Researchers use

multiple case studies to explore and understand the similarities or dissimilarities of the phenomenon in various places (Gaikwad, 2017). The multiple case study is more robust and helps better understand the phenomenon under investigation than a single case study (VanWynsberghe & Khan, 2007). According to Yin (2018), the appropriateness of the multiple case methodology captures the associated perspectives concerning business strategy alignment for project management.

My interest in exploring government strategy alignment with project outcomes to maximize public project success was best applied using multiple cases. Multiple cases offer the best accessible potential for triangulation and a thorough understanding of the complexities that may arise both in projects and government strategies. Besides, the multiple case study design is appropriate to ascertain whether the first case findings occurred in the other cases and, thus, the need to compare outcomes for all the situations. For example, in research with similar characteristics, justification using multiple qualitative case studies to explore factors that led to misalignment between project management and the business strategy in the telecommunication industry in Saudi Arabia (Alsudiri et al., 2013). Similarly, I explored those helpful strategies for project management alignment of outcomes with government strategies for an improved public investment project climate in Guyana, all within the contingency theory conceptual frameworks.

Qualitative researchers are concerned with understanding an issue versus representative numbers that indicate statistical significance. Queiros et al. (2017) found that some questions are better answered with numbers, while others are easier with

words. In the considered case for my study, remarks and comments will help me understand the study phenomenon. I relied on stories as against numbers to achieve the study objective. Qualitative research includes qualitative data and inductive approaches to answer the "why" questions. For example, researchers may want to understand the "why" of a particular phenomenon or why strategies have varying effects. Researchers use the qualitative methodology to explore the principal theories and reveal new ones (Yin, 2018). They use the case study to embrace repetitious cases to ensure data saturation (Bansal et al., 2017).

Data saturation comes when no more new information or themes emerge after interviews and the reviewed case document. While it is nearly impossible to reach total saturation, considering that there is always the potential to discover new things in data, though not the objective of saturation (Saunders et al., 2017). Saturation is not just to reach a particularly critical point, but rather where no more discoveries emerged to add further insights. Such a point must represent a ‘diminishing returns’ position in developing a sufficiently robust understanding of the phenomenon.

The saturation point is a function of the sample size, which should range between 5-50 participants in qualitative research, according to Martino et al. (2017). The administration of nonprobability sampling through an in-depth semistructured interview will require a sample size ranging between 5-25 participants (Saunders et al., 2015). An appropriate sample size is fundamental for researchers to achieve data saturation (Sim et al., 2018). Careful consideration is for the sample size not to be too small nor too large to make data analysis difficult (Saunders & Townsend, 2016).

I interviewed five participants and reached data saturation, for which I stopped at that point. Yin (2018) suggested a sample size of five as often sufficient for a case study research. The sample size of five proved sufficient to reach data saturation. There was no reason to extend the interview by adding additional participants for data saturation to understand the participants' perspectives. It is essential to recognize the data saturation point, where continuous research does not yield new information (Fusch & Ness, 2015).

Population and Sampling

For my qualitative case study, the population comprised those project managers who best aligned with the research question and those with hands-on participation as practitioners concerning the investigated subject matter and proclaimed to be subject matter experts. Researchers use a homogenous group of participants who meet the selection criteria. The intended group has the opportunity to gain relevant information while improving data quality and saturation (Tavor & Spiegel, 2016). Originated from the identified and selected individuals or groups of exceptionally knowledgeable individuals or experienced with the phenomenon of interest. I chose a specific population of those public-sector project managers who align their project outcomes with government strategies. Moreover, those who work for four PSIP project-based units within the geographic administrative region of Demerara/ Mahaica (Region 4) Guyana.

Sampling in case study research involves decisions that the researchers make concerning sampling strategies, influenced by the number of case studies and the description of the unit of analysis. Central to case study theory-building and testing, purposeful sampling is a more acceptable sampling procedure for qualitative research,

particularly when selecting participants for special situations (Marshall & Rossman, 2016). The technique is a 'statistically non-representative stratified sampling,' while similar to its quantitative counterpart. Its difference is in the sampling strategy. Even though case studies offer detailed and in-depth evidence about a particular phenomenon, the information gained is challenging to generalize because of the single focus phenomenon (Akers & Amos, 2017).

In identifying and justifying the sampling method, researchers find an acceptable way that ensures the sample type provides information richness and quality data. Purposeful sampling is widely used in qualitative research to identify and select information-rich cases related to the phenomenon of interest (Guetterman, 2015). The purposeful sampling method helps identify and select participants based on their knowledge and experience of the business phenomenon (Awiagah et al., 2016). Besides, researchers use the purposeful sampling technique to control the targeted population's scope and narrow down the participants (Coleman, 2018).

Researchers used the purposive sampling technique to maximize the chances of seeking information on a specific case concerning the phenomena under investigation (Coleman, 2018). Purposive sampling provides an informed selection for optimizing the chances of observing the phenomena associated with the research. Besides, researchers use the purposeful sampling technique to control the targeted population's scope and narrow down the participants (Coleman, 2018). I employed the purposeful sampling strategy to select the study participants to provide information about the study phenomenon. The interviews were free from distractions and held in the comfort of

tranquility, in a quiet location for quality audio recording, in keeping with Marshall and Rossman's (2016) requirements.

Ethical Research

Considering a qualitative studies' nature, researchers' and participants' interaction can be ethically challenging because of their involvement. Saunders et al. (2016) described research ethics as the standards of behavior that guide the research conduct and explain the participants' rights and those impacted by the study as critical for a research project's success. Researchers face ethical challenges in all stages of the research, from design to reporting. Moral flaws pose a severe danger to scholarly research (Honig et al., 2017). The formulation of specific ethical guidelines is, therefore, essential. The adherence to the Belmont Report of ethical principles is a helpful solution to combat ethical issues. The Belmont Report identifies fundamental ethical principles for conducting research that involves human subjects and sets forth guidelines to ensure the regulations are throughout the research process. The ethical principles of autonomy, beneficence, and justice guide researchers in balancing the research's needs and goals and the participants' rights.

The term autonomy explains that a person is free to decide whether to participate; researchers must respect that individual's rights. Steele et al. (2016) suggested that researchers must get permission from the participants. These principles are considered universal and do not have national, cultural, legal, or economic boundaries. Respect for persons is one of the fundamental principles in research. It recognizes a person as an autonomous, unique, and free individual. While Sanjari et al. (2014) noted

that ethical issues mainly occur during the interaction between the researcher and participants, each person has the right to make their own decisions. It gives the participant a dignified belief that they are valued.

The beneficence ethical principle appeals to the researcher's responsibility to maximize participants' and society's benefit while mitigating associated risk (Honig et al., 2017). The policy of ethics assures both participants and the broader community of their well-being concerning the study. It guides participants against physical and psychological harm; thus, the researcher must also ensure that the research benefit exceeds the assumed risk. Researchers must be fair to the participants, and the needs of research participants should always come before the study's objectives (see Glenna et al., 2019).

The justice ethical principle necessitates an impartial selection of research participants (Roth & von Unger, 2018). Ethical issues in qualitative research may arise from the researcher's effect on the participants and maybe subtler than quantitative analysis problems. Justice, at its core, seeks to avoid participants whose participation may have been unduly coerced - justice requires that participants must equally want to benefit from the research (Yin, 2018).

Qualitative research seeks to (a) uncover meanings, (b) understand the intent, (c) explain behavior, and (d) increase awareness of decision-making factors; the concept pertains to the notion of "doing good and avoiding harm." Universities typically develop a code of ethics in promoting ethical research, listing the principles and standards applicable to research (Frechtling & Boo, 2012). Considering the ethics for the research

includes the informed consent process ensures each participant is fully aware of all the proposals (Knepp, 2014).

Embedded in qualitative research are the notions of relations and power connecting researchers and participants. Researchers have a social responsibility to conduct their study ethically and preserve the research (Cumyn et al., 2018). To ensure the study had the maximum ethical consideration, I exercised due diligence and awareness, which was paramount for the participants. The participant's willingness to participate in a study depends on their enthusiasm to participate in their experience. Each participant was provided with the informed consent form for this study, which they reviewed before the interview. The content of the way included details of the study, including the objectives of the study. The interview process's procedure, risks and benefits of being a participant, withdrawal information, incentives, the security of participants and organizational identities, retention and protection of documents, and the participants' confidentiality were all found to be effective approaches (Korstjens & Moser, 2017).

All participants completed the informed consent form before their participation; the consent form explained all their involvement to what end, how, how long, and for whom. Besides, the participants' confidentiality was considered sacrosanct. Its preservation resulted in those remaining nameless, referred to as “P” for practical purposes of sequential numbering of the representative interview sample (e.g., P1, P2, P3, P4 & P5, with their affiliated organization as A, B, C, and D). All collected information would also be kept confidential; proper coding from the researcher must ensure accurate

coding from the collected data. The final report will not disclose any names (personal or organizational). The collected data will be stored for five years with encrypted password-protected loaded to an external drive in a locked container to protect the participants' rights. After the five years have elapsed, the researcher will destroy all the interview notes by deleting all saved data.

Data Organization Technique

The data gathering process in academic research demands that the researcher securely and adequately manages the data. The most common qualitative data sources include interviews, observations, and documents, none of which can be “crunched” easily by statistical software. For Alase (2017), the story of people’s lived experiences, events, or situations may describe as “thick,” suggesting the attention to the rich detail, meaningful social and historical contexts, and experiences. Besides, the emotional content's significance is open to the spoken words, including whoever is under consideration. While the research data is considered an asset, selecting the correct research participants for the study was tedious and daunting and must be carefully managed concerning its value. Qualitative interviewing ideally solicited the participant's perspective while eschewing judgment; thus, researchers' efforts resulted in the selected participants for the research. A careful selection provides the best chance of having rich and accurate study data, according to Higman and Pinfield (2015). I directed my analytic attention towards the participants’ attempts to make sense of their experiences in gathering rich and thick data. A qualitative research interview is more like a 'conversation with a purpose,’ which is implicitly informed by my research question.

I used a notebook to collect the participants' data during the interview to form a reflective journal - an account of the work in progress and a chance for reflection on the learning experience. I recorded all of the interview conversations with an audio recorder and simultaneously with my smartphone as a backup. All interview materials, including the hard copies with the recorded notes and the transcribe documentation of interviews, are kept in their original format. All data files will be safely secured in their original data format for five years, in full adherence to the university's data retention policy (Briney et al., 2015). Accordingly, after five years, the researcher can further use or otherwise destroy the data if no longer needed (Marshall & Rossman, 2016; Patton, 2015).

Walshe et al. (2016) suggested five-year data retention at a minimum to ensure data security. All hard copies will be saved in a physical folder under locked storage, including electronic files. The audio production will be for safekeeping in my personal computer, password-protected, and reinforced protection storage, with USB flash drive, encrypted. I used a framework approach supported by a qualitative software analysis tool. Framework analysis is an approach to qualitative data analysis that researchers use to manage, analyze, and identify themes (Hackett & Strickland, 2019). I considered the NVivo 12 from Windows for qualitative data analysis (QDA). NVivo, as a computer software package, is used by qualitative researchers to organize, analyze, and find insights in unstructured or qualitative data. According to Bonello and Meehan (2019), the outcome is consistent with the recommendation to analyze data for quality assurance. Nvivo works best with interviews where a deep level of data analysis is required. Bonello and Meehan (2019) offered an excellent illustration of how NVivo was used to produce

an audit trail. It tied in how the data findings, interpretations, and subsequent conclusions were traced and grounded to the raw data.

I used the framework approach to collate and organize the data and then used NVivo as the qualitative software analysis tool for coding and generate the themes. Qualitative data analysis aims to uncover emerging themes, patterns, concepts, and insights from the gathered information, coded through carefully double-checking the audio interview recording. I used NVivo to record, manage, identify themes, collate, and analyze data, thereby saving time. Increasing the efficiency of organizing the data will enhance the study's findings (see Kim et al., 2018). The coding and organization of data are critical components of the qualitative researcher. Yin (2018) discussed coding to explain how one defines the data analyzed and what they represent. Coding is the process of identifying a passage in the text or other data items, searching for, and identifying concepts and relationships. Coding is not just labeling, but linking data to the research idea and back to other data is considered most useful (Elliott, 2018). Concerning coding and analyzing the participants' information, I used thematic analysis to code the data. Saunders et al. (2015) opined that the thematic analysis helps identify themes or related patterns for reviewing the related research question for further exploration.

Data Analysis

Data analysis is significant within qualitative research because its interpretation may influence the investigation (see Mayer, 2015). Data analysis entails checking for the similarities between participant descriptions and the conceptual framework used in the study for meaningful analysis (Yin, 2018). Considering my research, which explores

business strategy alignment within project management, the case study technique is best for such an application. Researchers use the case study as the most accessible potential for triangulation and to gain a thorough understanding of the complexity and uncertainty in both projects and businesses (Mayer, 2015).

A significant antecedent for qualitative data analysis is for the researcher to organize the data using a systematic and methodical approach (Yin, 2018). The first approach requires the researcher to get acquainted with the data, requiring the researchers to review the recordings, transcribe files multiple times, gain familiarity with the data, and keep with the thematic analysis (Fugard & Potts, 2015). I reviewed the following: (a) transcribed files from the interviews, (b) member-checked interview notes, and (c) perusal of project documents provided. Further, the DBA doctoral study handbook makes provision for at least two data collection methods. However, characteristically, researchers use multiple methods to address their research question (Joslin & Müller, 2016; Walden University, n.d.-d).

Triangulation helps curb personal and methodological biases, and the effect is that it helps to boost the research findings (Abdalla et al., 2018). Researchers and participants alike have preferences and prejudices, which create influencing errors that affect qualitative case studies' quality and reliability. For Yin (2018), errors of perception hinder the credibility of the study design execution and the data analysis. Researchers should use open-ended questions that stare the personal bias and assumptions (Saunders et al., 2015). The ability to repeat the study to obtain the same results undermines reliability. For my research, interviews and data triangulation were the two valuable

means of developing the converging findings. Data triangulation explains the correlation between participants' views, project time, and space across multiple data sources (Fusch & Ness, 2015).

Besides the interview transcripts, there were also project documents from participant observation during interviews. The two methodological triangulation strategies are within or between methods (Hastings & Salkind 2013). I used within-method triangulation from two data sources, the interviews and document review. Those choices explain the rich and descriptive data sources from which I derived a meaningful explanation of my qualitative research rigor. Lawlor et al. (2016) offered several criteria that should be met for triangulation to be valid. Triangulation should result from at least two different approaches, and that the principal sources of bias are explicitly acknowledged.

Researchers found that making judgments from a personal lens is one of the most challenging qualitative research features. They wrote that hearing and understanding others' perspectives is a massive predicament that researchers today should seek to combat (Fusch et al., 2017). During my research analysis phase, I practiced conscious checking for personal bias and be open to new ideas. A meticulous approach to the qualitative process helps a researcher minimize prejudice and adds to the data (Maher et al., 2018).

Researchers may perform validity control measures such as triangulation, consistency, and replication to overcome the probability of systematic bias and false inferences (Zyphur & Pierides, 2017). Triangulation applies to multiple data sources or

numerous data analysis approaches to enhance the credibility of a research study. Triangulation of methods that include investigating potential divergences within the outcome will tremendously increase confidence in a study. Hussein (2015) affirmed that method-type triangulation implies multiple integral methods used in the data collection and analysis. It offered the most appropriate data analysis process to complete my study. The triangulation may result in new insight and a deeper comprehension of the phenomenon under investigation (see Joslin & Müller, 2016).

I triangulate the data by synthesizing codes from the reviewed literature, the project documents, and interviews to augment the overall themes. My data organization technique resulted in numerous codes, as mappings can help identify themes, summarize interview transcripts, and identify interconnectedness among the collective ideas (Conceicao et al., 2017). I used physical concept mapping by sorting piles of related codes. In triangulating the data, I sought connections in the data's coded categories and explored the key categories. I deciphered the themes coming from the coded data categories. I established correlated themes from mapping the collected data, with current studies from the literature review relating them to the conceptual framework. Vaismoradi et al. (2016) found that connecting themes to ascertained knowledge is indispensable in the research process.

Reliability and Validity

Building a suitable and harmonious methodology based on the research purpose is essential to ascertain a comprehensive research design, objectivity procedure, and reliability (Korstjens & Moser, 2017). No one evaluation method can speak to quality in a

qualitative research setting (Chowdhury, 2015). Reliability and validity refer to replication and consistency and provides a guarantee on the following essentials (a) the design, (b) rigor, and (c) data saturation (Saunders et al., 2016). In assessing the design, the measurement of the phenomena (the construct) creates the cause and effect connection (internal) and the means to apply the findings to other cases (external). All of which explains the repeatability of the study (Yin, 2018).

The second issue of rigor relates to the data collection analysis and coding, which account for the process credibility, the dependability of the method used, the ability to validate the data, and being able to transfer the results to other populations (Houghton et al., 2013). One method is to follow the TACT framework of (a) trustworthiness, (b) auditability, (c) credibility, and (d) transferability (Daniel, 2019). Trustworthiness is achieved through reflexivity, while suitability is through the full description of the data collection and the research process. Credibility is through peer debriefing and data triangulation. Transferability explains how the research findings can demonstrate their applicability to another setting or group of people (Daniel, 2019).

The third consideration is data saturation, which involves gathering and analyzing the data to determine where additional coding is impossible. Therefore, such explains that incremental data is no longer possible, suggesting enough information to replicate the study (Fusch, & Ness, 2015). Finally, the quality assurance for research is considered a profoundly entrenched provision in research work's validity and reliability (Saunders et al., 2015). I used dependability, credibility, confirmability, and transferability through the measures that follow:

Reliability

The researchers' findings' reliability provides credence to the overarching research and equates the research's reliability with the necessity for accuracy and appropriateness of the data collected (Morse, 2015). Qualitative researchers are obligated to present adequate information on research design and evaluate quality in academic studies, often evaluated from reviewing the survey against specific dependability criteria.

Reflexivity, triangulation, and detailed descriptions of the research process are all strategies to ensure dependability, according to Hays et al. (2016). Dependability in qualitative research refers to the consistency of findings across time. Dependability lends credence to the study and equates the research's reliability with the need for accuracy from appropriate data collected (Morse, 2015). Qualitative researchers are obligated to present adequate information on research design for quality evaluation in academic studies. Usually, a complete description of the research process, including reflexivity and triangulation, determines dependability, according to Hays et al. (2016). My study incorporated the three dependability strategies, in addition to member checking interviews.

Reflexivity monitors the researcher's assumptions and relationships throughout the research process (Hays et al., 2016). I remained conscious of my role as a data collection instrument: As the study proceeded, I kept awareness of my assumptions and the need to guard against bias. Through openness and collaboration with the participants will help build trust. Therefore, building trust is necessary, especially for methodological triangulation. It allows for the use of multiple data collection instruments that adds to

conformity (see Heesen et al., 2016). I consolidated several data collection instruments, including (a) interviews, (b) project reports, (c) baseline documents, and (d) reflective journals for methodological triangulation.

I presented an accurate description of my doctoral study research process, enhancing the findings' dependability. Besides demonstrating reliability, I used member checking to review the final documents and seek alterations of any explicit descriptions or themes. All were discussed with the participants to determine accuracy (see Birt et al., 2016). The consideration of member checking a second interview with the participants can also enhance the findings' credibility. In addition, member checking interviews serve the purpose and process of obtaining consent to use specific components in the final study report (Thomas, 2017).

Validity

In qualitative research, validity points to the accuracy of the findings (Darawsheh, 2014). The qualitative research results are credible when the findings represent an accurate representation of the participants' experiences. To ensure validity in a qualitative study, a researcher must address credibility, transferability, and confirmability (Yin, 2018). Credibility is a symbol of validity, and qualitative researchers aim to demonstrate validity through triangulation (Yin, 2018). Because credibility is an indicator of validity, I sought to incorporate methodological triangulation, which explains the degree to which my research findings are accurate. Hays et al. (2016) offered ways to increase credibility; there are not limited to triangulation but include reflexivity, thick descriptions, and member checking interviews. All of which were incorporated into my research.

Another indicator that demonstrates validity is transferability. Noble and Smith (2015) found transferability to involve the study's findings in different contexts. The transferability of the research results is a crucial element I considered during the study. I provided a complete description of the study objective and the findings to enable participants, researchers, and readers to implement any recommendations in their work. Korstjens and Moser (2017) explained transferability as the potential for extrapolating results transferable into other respondents' settings. The findings were documented so that the participants, researchers, and readers might adopt the recommendations. Researchers found that thick descriptions and triangulation lead to transferability (Hays et al., 2016). While I cannot create transferability from the research, my findings must yield applicability to others based on the recommendations— a pillar of transferability (Marshall & Rossman, 2016).

The third validity indicator is confirmability, referring to the accuracy of the participants' perspectives from the findings versus the researcher's viewpoint (Hays et al., 2016). Connecting data, its analysis, triangulation, and member checking are all used to establish confirmability (Hays et al., 2016). Upon gathering the data, I quickly organized the analysis data, which incorporated triangulation, reflexivity, thick descriptions, and member checking interviews to ensure confirmability.

Transition and Summary

In this section, I restated the purpose of the case study, enunciated my role as the researcher, described the participants, and provided selection criteria for the study participants. In Section 2, I examined how ethical considerations fit into the data

collection process framework, the proposed data analysis technique, and the proposed plan to ensure credibility, confirmability, dependability, and data saturation.

Section 3 described how my findings applied to professional practice and the implications for change. Section 3 comprised a discussion on the overview of the study, presentation of the findings, applications to professional practice, implications for social change, recommendations for action, recommendations for further study, reflections, and summary and study conclusions. I concluded the section with a final summary of key study outcomes.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore effective strategies that public sector project managers used to align the project outcomes with government strategies to maximize project performance. This multiple case study participants comprised five project managers who successfully aligned their projects with government strategies and worked for four project-based units within the administrative region of Demerara/Mahaica (Region 4), Guyana. The study data were primarily collected using a semistructured interview technique and review of project close-out reports. The interview process was complemented by reviewing documentation of successful projects completed by those who volunteered to help realize the study's intended outcome. The chosen projects were those with which the managers demonstrated successful alignment from three constructs with at least 80 % compliance; (a) identification of the set goals from the baseline studies and how they were captured within the project goals on a percentage basis; (b) exploration of each of the alignment factors of cost, time, and budget; and (c) examination of the end user's satisfaction from stated goals of both the project and organization. Successful realization of aligned projects occurred when at least 80% is achieved within the iron triangle of budget, time, and scope, where the original goals and business intent were met through higher benefit realization, according to PMI guidelines (2017).

I conducted semistructured interviews with five project practitioners who provided their perspectives and experiences in project management. The participants

answered nine open-ended interview questions and provided appropriate responses concerning the research question. The interview questions inquired about public sector managers' strategies to align project outcomes with government strategies to improve project performance (see Appendix A: Interview Protocol). After reviewing and transcribing participants' responses, I used NVivo 12 Plus from Windows to identify key themes across the transcripts. NVivo's software application helps determine accuracy in qualitative studies (Bonello & Meehan, 2019). This section discusses the applied design process results, identifies the key themes and conclusions deduced from the analysis, and offers recommendations for PSIP policymakers, project management practitioners, and project management researchers.

Presentation of the Findings

The research objective was to find answers to the central research question, and in answering the research question, I used a guided interview protocol for the interview process. According to Castillo-Montoya (2016), the protocol enables researchers to conduct the interview and ethically enhance the data collection process. The interview protocol included introducing the study objective, reviewing the consent form, ensuring the confidentiality of information provided, and obtaining approval for the interview audio recordings. I also asked the nine prepared interview questions and follow-up questions requested any necessary documents, and sought participation for member checking. The interviews lasted an average of 45 minutes and occurred at convenient locations chosen by the participant. I assured the participants of their privacy by

identifying the study data participants with pseudonyms PT1, PT2, PT3, PT4, PT5, and their respective organizations with pseudonyms A, B, C, and D.

I shared the interview summary with the participants upon the interviews' completion to confirm my interpretation for accuracy concerning the answers provided. Yin (2011) provided a five-step approach, which was the overarching technique used to guide the qualitative data analysis process.: (a) compiling and organizing, (b) disassembling, (c) reassembling, (d) interpreting, and (e) concluding phases. At the initial stages, I examined the organizations' project documents to confirm compliance and verify that the data collected from the semistructured interview method involved projects with successful alignment. Finally, I constructed a list of the initial codes that emerged from the analyzed data and grouped them accordingly, creating their respective anchor code. Then I tallied each code's frequency of occurrence to generate codes' categories and examined them to create themes. The themes below address the research question that explored the public organizations' practitioners' strategies when aligning government strategies to their project outcomes to maximize project performance.

The major themes derived from the analysis were (a) government/executive commitment and support for the project teams, (b) efficient project management skills, (c) aligning national strategy with project processes, and (d) managing public project processes with ICT tools. The documentation provided and a detailed description of the step-by-step process of the evolved findings created an accessible path for critical readers to understand the process. I offered clarity on the points of interpretation from the themes' extensiveness and assessed the validity of the data mining process results. In addition, I

extracted raw data from the thematic analysis to augment the practitioners' stories with direct quotes from the participants.

Theme 1: Government Executive Commitment for Project Team

The first theme from the analyzed data was the government's commitment to maximizing project performance. According to PT2B, the government must assign resources and enforce decisions regarding the project. According to PT1A, relationship dynamics work best within a stakeholder engagement plan designed to outline consultation and communication activities throughout the projects and present the pathways to incorporate feedback into the project's life cycle development. Similarly, for PT2B, "it is their support that turns the project concepts into reality." All participants expressed the desire for project executives to involve project managers in the business strategy development process. The five participants (PT1A, PT2B, PT3B, PT4C, and PT5D) recognized the need for the government executives to clarify the strategies for alignment as required by public investment projects that are purely out of the project team's control but needed communication. According to PT1A, misalignment occurs because project managers do not precisely get government strategies, reflecting poor communication as opined in Erceg & Gulam (2018). For PT5D, the organization uses its steering committee to understand the government's thrust in fulfilling its election manifesto promises. In further support, PT1A and PT2B observed that executives' support strategically helps align the government's long-term vision for improved project outcomes.

While business executives and stakeholders generally drive projects, they are treated as solution providers while not involved in the project fulfillment phase. PT5D described the National Procurement and Tender Administration Board as having a political role in the project execution process for information requirements. Its current evaluators display no contract engineering or project management skills. According to PT1A, they can delay the solution implementation efforts due to a lack of appreciation. PT3B opined, "I believe this challenge can be addressed by giving technical experts a seat at the table," referring to the upfront inclusion of technical support at the stage of project conceptualization and the initial planning. For PT3B, such practice would add technical value that drives the business case against following instructions and delivering what was requested. On the flip side, PT3B discussed how some technical experts also lack business knowledge because they are driven by technology and not the business case. PT4C offered a solution that encompasses finding a middle ground to bridge the divide; a nexus between infrastructure and business needs worked best in [named] organization. PT2B stated that,

> infrastructure projects generally follow the governing administration's priority, and their election manifesto promises… everything comes from the top when initiating a project, or the project will never take off.

Consequently, for PT1A, the government must sell its ideas through clear communications, enabling the project team to understand the strategic direction. In return, the project lead/manager must achieve government strategic alignment once it is distinctly communicated. PT2B's concern was how management executives made

decisions. "The challenges are with top management because they make decisions from top to bottom," PT4C explained the value of top management commitment in aligning project management outcomes with government strategies. PT5D and PT1A each expressed the desire for executives to involve project managers in project governance strategy development. PT5D posited that "alignment with projects to the government strategic plan involves a collaborative strategic development of the project plan." PT2B stated that after the top management's approval, the projects come to the executing unit for rollout by the selected contractor, local or international. Outsourcing depends on the environment and the project sponsor. International contractors with cross-country experience are helpful for project leadership, according to PT2B and PT5D. Project leadership skills are crucial in public sector investment because people in the construction industry come from diverse backgrounds and professions. The collaboration with the locals facilitates knowledge transfers, benefiting globalization. According to Potter et al. (2018), cultures are intertwined to fulfill short-term project goals in a varied and uncertain operating environment.

Participants PT4C and PT5D acknowledged the importance of executive committees in overcoming project challenges, especially those involving financial, environmental, political, and issues of project procurement. While the project executives seek to address those challenges for the project teams, PT5D stated that "sometimes the project budget is skewed for political expediency, and execution sometimes becomes problematic. Still, with some tweaking to the objectives, the project gets implemented." PT4C discussed adequate administrative support in providing training as a benefit of

stakeholder collaboration. "Expatriates usually provide knowledge transfer and develop the local project team's skills," according to PT4C, PT5D concurred. All participants expressed the desire for executives to involve project managers in its business strategy development process. PT5D said that in "developing projects to align with government strategy planning, one must at least be involved in developing the strategic plan at a minimum." PT2B similarly held that "if you decide to go ahead with the project, then the executives must involve project managers in the government strategy development."

Correlation With Recent Studies

The role of executive management in project management has been discussed repeatedly in the literature and received more attention in this research project. According to PMI's (2017) Pulse of the Profession report, engaged executives drive projects in meeting their original goals and business intent. PT1A, PT4C, and PT5D's assertions supported Alsudiri et al. (2013), who identified the importance of the executive and the project managers in the organization’s strategy development. Still, project managers continue to examine ways to enhance executive support, the lack of which is the second most significant factor contributing to poor project performance, according to PricewaterhouseCoopers (2012).

In principle, PT1A explained how empowering [their] organization executive extends the sphere of the respondent's influence. Therefore, stretching beyond the project boundaries and up into the organization, such influence may help executives act and implement speedy action (PMI, 2018). For example, PT5D explains that some projects are taken to the tender board in the interest of time, even before the national budgetary

appropriation for the fiscal year. Similarly, when the project coordinating agency involves the project managers, their involvement is to better understand the government's business strategy processes, allowing project managers to implement. Similarly, by adding practical inputs and feedback mechanisms to the strategy, the project manager in the strategy development helps build an effective work environment, according to Silvius et al. (2017).

Erceg and Gukam (2018) found that some public investment programs were beset with poor communication and coordination among the critical stakeholders. Despite such, PT2B, PT3B, and PT5D found the various government executive committees appreciate effective communication, which realized the project management processes' alignment with the implemented government strategies. However, executive support means that executives must maintain a hands-off approach but must avail themselves when problems arise (Khan, Waris, et al., 2019). A government's commitment through effective communication better maximized project outcomes, according to Erceg and Gukam (2018). PT2B remarked that the executives do involve some project managers in government strategy development. The collaboration with government strategies minimizes the scope of defining the problem, reduces design errors, and creates a workable schedule for critical problems affecting project deliverables and milestones (Badewi, 2016). The maximization of collaboration and coordination among stakeholders drives positive results, according to PT1A. In contrast, the opposite is true - a traditional contracting arrangement involving a lack of coordination among stakeholders, which would yield a less desired outcome (Ling & Tan, 2015).

Chiarini (2016) argued that the prudent executive action of showing commitment had a positive long-term effect on achieving significant project outcomes. The participants' responses were in line with Chiarini's findings. PT5D suggested that executive management commitment is essential in strategy alignment with projects to maximize project outcomes. Similarly, communication engagement was seen as a critical activity for strategic alignment, according to Chiarini (2016). PT3B describes the communication process as "weekly and monthly progress reporting and meeting," resulting in "effective consultations or scoping meetings to guide the infrastructure projects." A reconciliation of the different project teams and designs enables sustainability for a fulfilled project when the communication and strategy alignment is of utmost importance to any project deliverable and milestones (Zolfaghari et al., 2017).

While project success often depends on how well the executives communicate, building relationships with the project manager during project life cycles allows for better outcomes. For PT5D, "stakeholders add value to the design process and provide the business analyst with the necessary information for systems engineering." In some situations, according to PT1A, the strategy misalignment occurs because no one explains the responsibilities concerning the project outcomes, which is consistent with the findings of Erceg and Gukam (2018). Project executives often do not understand their roles and responsibilities of providing support to lend direction for strategy adoption, cited by PT1A. However, PT3B underscored the importance of project reporting responsibility and opined,

> One must be clear: who their reporting officer is and what matter is being dealt with by whom, which have always been a bottleneck to a project because persons are unaware of who is dealing with what aspect of a contract and project.

Administrative support is needed to improve project success rates; environmental issues can result in strategy changes or regulations that influence projects' progress and outcomes. Empirical evidence described the relationship between executive support for project success as commitments, beliefs, and rewards as the most significant variables affecting project success (O'Brochta, 2018). PT1A found that stakeholder support is enabled by embedding the requirements for an effective mechanism to address grievances - a workable framework that projects could practice. In addition, they can provide insights for senior managers regarding the executives' roles in organizations to contribute to project success.

Alignment of Findings to Contingency Theory

Applying Fiedler's contingency theory, leadership preference plays a significant role in project success in varying situations. The model establishes that leaders are either task-focused or relationship-focused. Understanding one's style of management is required to facilitate the most effective match in a given situation. For example, those leaders with a preference for the human orientation (High LPC) will do best within favorable conditions. In contrast, task orientation leadership (Low LPC) will be most effective in unfavorable situations (Fiedler, 1964). Besides leadership style, job design, decision-making participation, and organizational structure are criteria for an excellent overall managerial outcome. Davies et al. (2016) opined that the implications seek to

balance the importance of an individual's preference and situational factors. The analyzed data was centered around the organizations' size, uncertainty, and complexity, which is best understood using the contingency approach. It is a mechanism for better performance when linking the front-end with the relatively late project cycle phases. According to Qazi et al. (2020), when uncertainty increases, the appropriate structure must be less formalized and more decentralized, with systems coordinating between functional departments such as project teams. In comparison, the appropriate structure will significantly raise the degree of bureaucratic structure. The more autonomous project teams realize organizational strategic objectives, according to PT4D.

Three of the five participants impliedly suggested front-end collaboration as critical because it allows obtaining better information from a flexible project portfolio. Similarly, researchers found that the contingency theory provides the best uses for strategic flexibility by extending the framework to organizational choice utilizing the goodness of fit (Starkey et al., 1991). For PT2B, the main aim of the front-end management style is to get the strategy anticipation right –a critical element for prudent decisions at the initial stage of the project rather than during execution. Pinto and Winch (2016) discussed supporting a positive link that connects successful front-end and overall project fulfillment. PT4C depicted front-end practices as the period between the proverbial "blank sheet of paper" up to the project proposal stage.

In contrast, PT2B saw it as "the concept notes that invaded the project that gave rise to the project charter." Still, the actual benefits of front-end success depend on the environment and the government mindset—those additional measures taken by the

executives to support the exploitation of the promising project (Pinto & Winch, 2016). PT5D describes the process as starting with a 'Trip report' containing all of the pre-requirements. It later becomes a "memo," containing all technical details, the soft skills, socioeconomic issues of the community that will benefit from the project. Powerful upfront collaboration connecting the project executive with the project design team and the executing contractor effectively addresses risk and uncertainty by improving the project participants' dynamic capabilities (Davies et al., 2016). Each of the four organizations had different structural variability.

While both managerial and technical tasks have different degrees of complexity depending on their purpose, the interdependencies required for completion allow for contingency theory application. While complex projects need direction from the executive, establishing executive directions requires effective communication of a sharped aligned vision to benefit higher-performing project teams (PMI, 2018). A holistic commitment by the executives to project management is vital in realizing more sustainable project governance practices, according to Volden and Andersen (2018). The commitment must allow for the empowerment of project managers to benefit from aligned project outcomes. Executives who adopt sustainable principles in the decision-making processes had better results than just relying on the constraint of time, cost, and quality, according to Silvius et al. (2017). The use of objective information, track records, communication between partners, and confidence in partners' competence constitutes the commitment's trust.

Theme 2: Efficient Project Management Skills

Implementing efficient project management skills is the second theme that emerged from the analyzed data. The participants expressed that considerable project management skills (hard and soft skills) are prerequisites for successful projects. The participants demonstrated the importance of soft skills for infrastructure project teams. A likely suggestion because most public project managers are foremost engineers and need professional project management training. PT2B explains how embracing new project management practices can be helpful, "I must remain flexible, given the complex environment in which megaprojects operate." PT3B introduced a communication perspective that strongly encourages project teams to provide feedback instead of being static in the mundane and routine work roles. PT2B used the feedback to focus on information specific to individuals in determining the skills set to understand their assigned roles. Similarly, PT5D uses peer review, which allows the team to critique each other to release and remove any gaps. The process supports the empowerment of the project team in general, as Tabassi et al. (2016) found empowerment helpful in managing public projects.

In addition to technical competence, exceptional soft skills attributes are necessary for success when managing engineering projects. Alias et al. (2014) specified infrastructure projects and the use of knowledge management (KM), both the traditional and modern management practices, with a broad application for the project's design that includes the construction process. PT5D acknowledged some of the challenges with project failure but suggested: "effective and workable KPIs to guide the construction

implementation of these projects is what makes the difference." Participants (PT4C & PT3B) emphasized how knowledge management (KM) adds value to the project, program, and portfolio success. They opined that public policymakers must have the ability to review the arrangements of the project carefully. According to PT1A, one must be able to "deduce the most realistic contract completion timeline."

The project managers in organization 'B' had significant concerns about lacking in-depth technical skills and experience to determine the project contract timeline accuracy. Asked how effectively data is used in determining project timeline, PT2B noted "the picture is mixed" but suggested that project software provided predictability. From the pursued documents, it was observed that while some used the data effectively, there are others where the potential for data use is encouraging but missing. PT2B offered this example, "architects would generate the project designs, but may not have thought of using the computed data to prepare the bill of quantity (BOQ)." The BOQ helps derive the tender price, which becomes helpful in the administrative review in the approval processes. Most of the used data revolved around solving critical problems that enhanced the project management processes from the observed documents. PT1A said," the project team analyzes the project's scope, contract, and other information to define the deliverables, after which the team will develop the milestone schedule."

Much of the data used historically lacked current performance indicators and records from previous projects. Features of the reports included causes of delays, systems planning, systems design, systems implementation, performance, and user involvement. PT4C addressed how data use has evolved and drew reasoning from the benefits of

Oracle and its Oracle Aconex. “The platform provides dashboards that facilitate identifying issues such as pending change requests with revised approvals,” PT4C opined. Although not always adequate, PT2B found collaboration and cooperation essential among all stakeholders to coordinate with the executive on effective project timelines. While utilizing the project management tool enables practitioners to document effectively, the derivation of analytical information remains problematic. Still, PT2B illustrated the tactic used to measure performance and to determine contract time. The balanced scorecard provided a comprehensive framework that translates strategic objectives into an identified set of performance measures integral to the project management process.

Similarly, PT3B found the work breakdown structure (WBS) a valuable tool for collaboration and reasonable expectations for milestones and deliverables considered from the SMART goal perspective – a guiding criterion for setting objectives (specific, measurable, achievable, relevant, and time-bound) based on the government’s expectations. For PT5D, after seeking buy-in from the project’s engineers and technicians, the estimated timeline becomes an agreed schedule. PT1A opined that prudent engineering and KM from experienced team members provided remarkable gains during the planning and project implementation. PT4C similarly remarked that having the needed project skill is essential when managing and evaluating complex engineering designs. PT3B highlighted examples that determined the associated risks and showed how the team developed workable timelines, assigned tasks, and set attainable milestones. There were quite similar to that of the SMART approach adopted by PT5D.

Engagement through effective communication and empowerment are practical management skills that directly influence infrastructure projects. PT3B emphasized that project managers should avoid portraying the attitude that suggests only one way of performing the project. While experience matters, as discussed by PT5D, knowledge transfer is a feature of project communication, described as a “toolbox” meeting with the staff. PT3B stressed that project managers need to listen attentively,' allowing members to participate freely. For PT4C, "I get a better understanding of the project's issues by hosting regular meetings. The feedback provides a collaborative team approach concerning the project deliverables and milestones are the benefits described by PT1A.

Correlation With Recent Studies

Many failed projects showed poor management skills concerning the hard and soft skills of the project manager. These skills contribute to continuous learning, according to Sabrokro et al. (2018). Public project managers must be trained with the required skills to implement successful project alignment to maximize outcomes (Cole, 2017). Consequently, the respondents suggested that novice project team members need education and training to quickly learn to adopt the new knowledge required for project management amid changing environments. According to Pretorius et al. (2018), the required knowledge includes standard scope, cost, quality, customer management, and the ability to recognize and implement other appropriate project management methodologies at each stage of the project lifecycle. Carvalho (2015) describes those requirements as relevant for improved project management skills.

Engagement through effective communication and empowering subordinates are practical leadership skills that directly impact infrastructure projects, according to Berggren (2019). Similarly, PT2B spoke of the benefits of effective communication by encouraging project teams' feedback on issues that may change the mundane and repetitive work roles in a dynamic environment. Communication may impact one way or another on the project outcomes; as a result, PT5D opined that a cultural element of empowerment supports open communication. According to Abou-Hafs et al. (2019), applying broad-based blended skills approach greatly assisted project leaders. In contrast, low participation in empowerment concerning planning and implementation at a housing construction project led to the project's delivery (Lin, 2018). Still, communication strategies may work best as critical success for project implementation when blended appropriately with the relevant stakeholders (Zuofa & Ochieng, 2017). PT4C opined that "there would undoubtedly be times when you have to collaborate with people in other departments."

Researchers in behavioral competence learn how soft skills and technical competence (hard skills) have impacted project outcomes (Abou-Hafs et al., 2019; Tian, 2020). While the participants exhibited hard skills from their engineering experience in mapping project processes, three of the five participants emphasized soft skills to support their project teams. Generally, studies concerning hard and soft skills have all come up with similar conclusions concerning project practitioners, even though their methods differ. In their designs, some were quantitative; others were through concepts and available theories. Similarly, Balcar (2016) found that both hard and soft skills increased

productivity. For example, PT5 discussed that a smooth blend of interpersonal and social skills among teams is an excellent mix to improve work efficiency. For Rao, a “judicious blend of hard and soft skills is essential for achieving professional and leadership success” (2018, p.215).

Interestingly, soft skills effectiveness facilitates hard skills' success, requiring prudent communication for project management coordination (Ofori-Kuragu et al., 2016). Therefore, cross-functional support during the project implementation process with clearly communicated goals leads to project fulfillment. While soft skills increase the project's potential to be on time and within budget, researchers discovered that the positive impact was more pervasive in the on-time delivery of infrastructure projects (Musembi et al., 2018). In addition to non-cognitive (soft skills) activity demonstrated through effective communication, performance behavior is essential for project management communication with non-technical folks (Smith et al., 2018).

Alignment of Findings to Contingency Theory

The second theme concerns the effectiveness of project management skills which correlates with the seminal works of Fiedler's contingency theory. Fiedler established a contingent relationship between the project environment, leadership style, and organizational effectiveness - an approach contingent on the prevailing circumstance. The participants demonstrated varying degrees of hard and soft skills at different stages in the projects’ processes. PT1A and PT4C implemented strong technical skills for their projects; planning, analysis, tracking, and problem-solving at the initial stages of the projects, blended with softer skills within the project life cycle processes. “ I ensure that

all possible issues that can arise at the planning stages are dealt with upfront concerning the processes in the project cycle," PT4C opined. PT3B demonstrated more hard skills throughout the project processes but showed empathy for collaborative influence in leadership. Given the unique consideration required for each project lifecycle phase, a flexible management solution was the participants' (PT3B and PT4C) answer. Their effectiveness demonstrated softer skills application with benefits during project fulfillment, mainly when applied to the project processes from the given task, as seen in Cole (2017).

According to Mirza and Ehsan (2017), project managers must exercise two kinds of hard skills. First, technical skills within the project's domain include analysis, planning, tracking, and problem-solving - usually numerical, logical, and data-oriented skills. Second, to determine the behavioral approach towards incorporating decision process support into project management, which has its roots in the Decision-based system development paradigm. For example, PT2B and PT4C used the Gantt chart and PERT to illustrate project progress and milestones with dependencies. Those tools provide a quick project overview, enabling swift management decisions at a glance, according to Mirza and Ehsan (2017). Approaches that incorporate decision process-support into project management are rooted in project managers' everyday work as the primary source for understanding the competencies of relevance. While project management methodologies often overlap with complex societal and political dimensions, a design like the agile approach may provide a more inclusive management approach. Policies of selective flexibility, learning, adequate authority, people first,

collaboration, in consideration of unstable conditions, may prove a complimentary replacement for traditional project management practice.

Vidal et al.'s (2017) contingency approach to leadership found that effective project management requires considering two approaches. The first is the traditional leadership approach based on technical skill and know-how, which requires managers to complement people skills in implementing specific tasks. The second involves processes in complex project environments. DuBois et al. (2015) found that maintaining leadership qualities aligned to the organizations' environment facilitates smooth and efficient project management. The right strategic approach must decide what organizational culture and leadership are needed to execute the strategy successfully (Reeves et al., 2018). The process requires a match between the environmental characteristics and those of the organization to yield high performance. This match is called the 'fit'; the better the fit, the higher the performance.

Theme 3: Aligning National Strategy with Project Processes

The third theme that emerged from analyzed data was customizing project implementation processes and procedures to suit each organization's specific project implementation requirements. For PT1A, to benefit from a workable national strategic approach means integrating practice entirely into all aspects of the system. It is not an additional task or an ad hoc activity but a routine and integral part of the system itself. PT1A opined, “a key function of a dedicated implementation strategy and approach is to ensure sufficient flexibility to adjust strategy, objectives, and priorities in response to changes in the broader political and operating environment.”

Government plays such a crucial role within the project concerning identification, design, and decision-making process. Therefore, for PT1A, it is necessary to leverage specific organizational characteristics during the project management process to ensure a successful outcome. PT3B suggested that project appraisal embraces internal and external variables using the public sector management approach. PT3B opined that the program budgeting and value-for-money analysis help consider the risks to be borne by both the public and private sector partners (project end-users). According to PT4C, “feasibility studies determine whether the project is a feasible or viable investment; in its absence, infrastructure projects will continue to fail.” In assessing viability, consideration must be both internal and external. According to PT2B, internal, cost-benefit analysis, and environmental impact assessment are the primary external considerations. Besides, the analysis should also include private sector participation and projects' suitability to develop the other sectors. According to PT3B, forward and backward linkages for economic growth and development are encouraged.

According to PT5D, the methods and techniques specific to each project process helped participants overcome past problematic issues, citing lessons learned from monitoring and evaluation. Similarly, PT4C remarked that "with lessons from the past, the project teams and contractors now have a clear understanding of the project manager's expectations, especially those concerning the government's strategy.” Illustratively, PT3B established a procedure that best helped track information that reduced the contractor and project timeline. In contrast, PT4C observed a procedure involving a form template that illustrates communication flow charts and verifications in a more precisely formulated

way. PT1A and PT3B discussed similar experiences adopted in their organization's project procedures.

Correspondingly, PT4C used a standardized step-by-step project tool called a work breakdown structure that presented the management details for the various project execution phases. In organization ’C,’ the project team followed the formalized process by inspecting the tasks and identified timelines. Although an independent supervising consultant firm maintains quality assurance, according to PT4C, using the management checklists is another tool for determining project quality management. For example, PT3B's quality management checklist offers a condensed and effective road map. The lists showed by PT4C and PT3B was operational during the design stages, with data obtained as the project develops. When asked about the list's effectiveness, PT4C explained that while the road map cannot show every quality measure, it aids decision-making.

In addition to the process of checks and balances, communication, documentation of bills of quantities, standards of delivery, and acceptance reporting are measurements to support the standardized procedure seen in the observed reports. The success of those activities triggers the contract acceptance criteria for the achieved milestones consistent with the guide in PMBOK. PT1A explained that a fundamental input collaboration for the management review processes involved the project consultant in realizing the process for the change management. To increase operations input into the project design according to PT1A involved sending the engineering blueprint for operational review and feedback at

the initial stage (foundation). After that, the change is agreed to and finalized, then implemented and executed as an approved change plan, signed by the relevant parties.

PT1A's procedure worked well within the project management process in the planning phase when supplemented by Agile-Scrum methodology. The hybrid methodology allows for a flexible framework readily tailored to any project type or size, associated with the work environment, and finalized within an agreed-on timeline, according to PT1A. While Microsoft Project efficiently documented and monitored projects (regardless of their size/scope), PT4C explained the need to break the project into events and activities in a work breakdown structure. Described as a schedule that monitors each activity's quality and effectiveness within a systematic procedure. PT4C further illustrated,

> We often get into problems with contractors when they turn up on schedule and find they cannot work because of an earlier activity lagging in time. It is more of a problem than the lagged task is their dependent activity.

The challenge suggests that timely communication and continuous collaboration beyond the supply chain can make a big difference between success and failure in infrastructure projects and improve productivity in delivery. PT2B observed that "while a project is initiated and completed as a unit activity, it now involves the sum of the; supply chain and general stakeholders' support." PT3B found usefulness in project schedule tracking by creating documents to track progress and monitoring risk. The use of Oracle and its Oracle Aconex platform provides dashboards that facilitate identifying issues such as pending change requests and review approvals. Similarly, PT1A prefers an integrated

delivery team that aligns around end-to-end solutions, not technologies. According to PT1A, to realize the best result, the "project information should be updated within the MS Project planning space, allowing the project to constantly be updated and streamlined with the technical team's tasks."

Concerning risk management, the participants found the risk register helpful in handling the risk management, i.e., mitigate, accept, transfer, or ignore the risk depending on the circumstances through collaborative efforts. The participants concurred that there is a need for solid leader-member relations for project success. These must extend off the enablement tools that empower individuals to be productive without the need for hands-on leadership, a tenant of the studies of both Fielder (1964) and Maqbool et al. (2017). Still, PT3B and PT4C noted that leaders must present tasks clearly and with outlined goals and procedures. Similarly, PT1A advocated using project charters and the five stages of the project management life cycle reworked into a WBS - breaks down the project into individual activities and assigns each activity with responsibilities, labor intensity, and time demands.

Correlation With Recent Studies

Governments implement infrastructure projects and strategies to deliver projects, despite their challenges. To be efficient in selecting projects, allocating efficient resources, effective communication, and prudent leadership practices would be valuable for delivering the desired project outcomes (Hyväri, 2016). The strategy employed by the participants reinforced McAdam et al. (2019) study of the contingency theory and its applicability for leaders to analyze management effectiveness to gain competitive

advantage. Communicating the objectives of the projects while maintaining controls for the project requirements are roles of project managers (Dyer et al., 2016). Still, infrastructure projects require organizational strategy, driven by the executives in a centralized way through sustainability for competitive advantage (Hyväri, 2016). A unified entity like the project management office (PMO) will drive resource allocation, stakeholders, sustainable initiatives, and the realization of end users' satisfaction completion - a unit responsible for the project portfolio management.

Regardless of the methodology, allocating the right amount of time for planning increases project outcomes in the long run. A good project plan offers benefits as reducing uncertainty, increasing understanding, and improving efficiency. While the project practitioners view the end users' as the ultimate project stakeholders, they treat the outcomes as the critical success factor. The plans executed through others provide a basis for measuring work planned against work performed (Wysocki, 2019). Consolidating a customized process with a standardized project methodology may allow a comprehensive solution for project management success. Besides, techniques have enhanced projects' effectiveness, which has achieved project success concerning end users’ satisfaction based on the prevailing contingency of volatility, uncertainty, complexity, and ambiguity (VUCA) (Pace, 2019).

Researchers found that the appropriate procedures and templates to selected processes would enhance the process implementation to maximize the project's outcomes, aligned with the organization's goals and objectives (Kononenko & Lutsenko, 2018). Not all the participated organizations have standardized project management processes.

However, the successful practitioners found means to adopt new standardized strategies into their project management process to improve effectiveness based on their project training and experience. Kononenko and Lutsenko (2018) offered the benefits of professional institutions and developing project practitioners' management of the projects' processes and procedures within various industries and project management needs.

Culture drives the organization's commitment by establishing the underlying behaviors and attitudes that push the day-to-day pursuits within the organization (Hopkinson, 2017). While Reeves et al. (2018) found traits in the culture correlate with success in each strategic approach, careful project development is essential for efficient public investment in infrastructure. While all five participants shared the essential role of risk management, organizations should build a culture that supports project risk reporting. PT1A explained that project managers and team members are responsible for developing effective risk plans and communicating the nature of the risk status with the stakeholders. PT2B was very forceful in suggesting an alignment between the organization's risk culture and risk management strategies, facilitating all stakeholders. A robust risk management culture development positively impacts risk management when used appropriately with project tools and techniques (Hillson & Murray-Webster, 2017; PMI, 2017).

While proper implementation of project management processes is a critical success factor, arguably, projects may find difficulties in achieving targets without applying the PM tools and techniques (Hoxha, 2017). Similarly, observed from PT2B,

but better advocated by PT4C, "irrespective of how you start, each program should inform the other." Such practices allow the project team to track progress, minimize project constraints, and deliver end user's satisfaction. For PT1A, a significant constraint is the absence of a dedicated operational strategy and associated mechanisms to manage and oversee projects.

Active management and investment ensure that they can serve as effective frameworks to facilitate and channel coordinated and collective efforts against common goals, according to PT1A. The implication from the analyzed data suggests the applicability of the resource-based management (RBM) approach — a concept with its origin in the 1950s, Peter Drucker's management by objectives (MBO). RBM focuses on the outcome rather than the output, essential for project fulfillment. Like MBO, RBM combines project goals with responsibilities to the organization's objectives, facilitating strategic fit to maximize outcomes. Its adoption as a strategy allows for better results for project governance, according to Otundo-Richard and Langat (2019). While public sector project performance is successful with RBM in developed countries, it is comparatively a novel concept (Olufemi, 2016). According to Otundo-Richard and Langat (2019), the developed countries are better at public project service delivery; the reason identified was the use of RBM. Still, PT2B opined that "project managers must focus on operational and tactical issues within the project lifecycle stages." In contrast, strategic planners, including executives and project policymakers, must initiate forward-looking strategies.

Implicitly, it suggested that operational initiatives and goals are for project teams' work plans. Similarly, Sharma (2016) found that the PBM approach to be a critical

integrative strategy. PT4C advocated a well-structured and adopted RBM strategy across the project cycle to measure efficiencies. Unhindered globalization and its influence on crowdsourcing and outsourcing, project practitioners are now required to tailor their project management methodologies (PMI, 2017). Therefore, applying the best-standardized processes will guide the project implementation and address the project's parameters problems depending on the project outcomes, according to Kononenko and Lutsenko (2018).

Alignment of Findings to Contingency Theory

Several researchers conformed to the central tenant of Fiedler's contingency theory. Their ideas that open systems with external interactions (like construction projects) can reach the same goal but from different initial positions that follow different paths to fruition. The variabilities are because no one-size-fits-all approach would provide a workable solution for project management (Maqbool et al., 2017; Miterev et al., 2016). While Fiedler introduced the theory as a leadership effectiveness model, the theory predicts higher management tools in organizations with goal clarity. Clear goals with measured management processes and outcomes make it easier to apply the management tools (George et al., 2019). Setting clear goals and managing each objective is how PT4C explains project resource usage in each project phase, a workable approach for managing by objective. In practice, the respondents were all comfortable with their organization's management practice that supported the best fit for the project execution. The government and the project executing team's management philosophy considered the

challenges and risk perspectives. The contingency theory predicts higher management tools in organizations with clear goals (George et al., 2019).

Maqbool et al., 2017 used the contingency theory to describe a class that indicates outcomes contingent on factors' prevailing variabilities. A similar classification was also affirmed from the analyzed data. While the participants explained the need for projects to be adaptable based on the prevailing circumstances, contingency lends credence to their project practices, the ‘best fit’ for leadership effectiveness. The observed flexibility by the practitioners concerning their organization’s management practice is an essential couture strategy aligned to incorporate with the contingency theory. The participants shared stories of how open meetings received supportive feedback. For PT5D, the flexible application works with a management practice that evaluates each situation as unique to those conditions. Therefore, a leader's effectiveness may depend on the prevailing circumstances resulting in two factors: leadership style and situational control, as opined in Saunders et al. (2015). Leadership challenges remain those conditions that require adjustments for external environmental factors. Again, PT5D opined, “I will conduct regular meetings for feedback and reflect on working arrangements, the performance of all implementors, and areas of improvement.” The contingency theory advocates aligning external conditions to better assist leaders in increasing their overall organizational performance (McAdam et al., 2019). The practitioners' PT4C and PT5D justified project management experience, which adds value to a customized process with better structure, flexibility, and a more inclusive approach for their projects' fulfillment. The contingency theory provided alternatives that helped design the portfolio better and

better plan the information decision systems, especially for mega projects with uncertainty and complexity. While projects' dynamism and required flexibility are based on internal controllable variables (time scope and cost), the contingency approach provides uncontrollable external environment variables.

Project success from the proposed business value is derived from the end-users and measured from the process that created the benefit realized (Wysocki, 2019). The analyzed data explains how project leaders need to exercise flexibility regarding project leadership styles in their project management approaches. According to PT5D, flexibility infers that project leaders must adopt management practices to accommodate the various circumstances. Joslin and Müller (2016) describe them as project characteristics consistent with the prevailing circumstances. Therefore, the challenges concerning the project management plans and the choice of appropriate project management methodology must be relative to the varying factors and circumstances that illustrate the contingency theory's applicability.

Acknowledging the appropriate tools for managing construction and infrastructure projects in complex environments, researchers explained the usefulness and how better they are in assessing project success (Wali & Othman, 2019). To this end, numerous tools were evident as proof of their use were cited by PT1A, PT2B, and PT3C. They displayed several project dashboards with varying sensitivity analyses from anticipated external variables, along with the associated risk probabilities. Matching charts with resource allocation for project support were also perused, from which project continuity was evident. The illustrations focused on maximizing project outcomes using those project

management tools. In practice, some questions are better answered pictorially; they affirm how and why project practitioners used contingency planning to mitigate challenges concerning uncertainties (Queiros et al., 2017). The contingency theory is suitable for solving organizational choice differences, design megaproject management strategies and processes regarding the differences in the project contexts, and changing environmental conditions (Wysocki, 2019).

Theme 4: Managing Public Project Processes with Information Communication Technology Tools

The use of ICT in project management allows for new management. Information communication technology applications seek to replace the laborious and time-consuming tasks associated with the traditional method. Information communication technology offers substantial flexibility in organizing capital and resource facilitation to rapidly transfer accurate information (Joslin & Müller, 2016). The flexibility allows for faster decision-making for implementation, resulting in quality improvements and timely project completion. One influential factor in achieving the project's goals aligned with project outcomes is technology. Balancing and integrating the relationships among these elements can result in optimum project performance. Information communication technology helps improve the ability to represent and analyze the increasing variety of activities in projects. Everyday activities are increasingly carried out through digitally mediated interactions of complex activities.

While ICT will work as an input factor, effective communication is a function of the fed information (factor input); as such, there remains the potential for inaccurate

decision-making. Accordingly, PT2B established a strong communication plan in collaboration with the aligned business strategies. Still, organization ‘B’ uses IT tools for decision-making. PT3B from that organization opined, "I support business strategies with enterprise resource planning (ERP) and electronic data interchange (EDI)." As more and more organizations use technology to augment human skills, IT can help organizations prioritize complex problem-solving procedures for continuous improvement (PMI 2021). Technology is helpful in organizations' daily functions, and PT1A identified Microsoft Project as applicable. In contrast, PT3B found useful ERP software programs that allow data to communicate between the governments' departments and the project's internal functions.

Organizations require clear communication with internal and external stakeholders, so goals and objectives are understood among the parties (George et al., 2019). Governments are now aligning their projects’ management with business strategy. They have seen significant benefits concerning organizational goals, procedures, and performance. While the new public service management model allows for business management strategy application, its application in project management is growing. According to Ferlie (2017), the new public service management model allows for empowerment and active performance measurement, enticed by the contingency theory. Those considered flexible organizations empower their people to make changes by enabling them to master different working methods, becoming well-rounded professionals with elevated power skills (PMI, 2021)

PT1A identified the stakeholders' analysis and matrix as helpful tools in designing and implementing solutions throughout the project management process whenever conditions change. While plans may fail primarily because of inefficient stage gate reviews, they lack the feedback necessary to detect significant threats. Accordingly, P2B explained that public projects linked to business strategy might better accomplish organizational goals. Shenhar's strategic project leadership (SPL) framework identifies the project management elements that organizations should align with business strategy, including (a) project strategy, (b) spirit, (c) organization, (d) project processes, and (e) tools, all of which are synonymous with PT1A's contention.

Contrastingly, PT3B advocated the balanced scorecard model, a performance management system that balances the project's short and long-term business objectives. A strategic management tool that evaluates financial and non-financial and internal and external variables determine the organization's effectiveness and determine when corrective actions are necessary. According to PT2B, the balanced scorecard was most suitable because of its feedback mechanism concerning the internal business processes and external outcomes and the continuous improvement of strategic performance and results. ICT has provided projects with the tools and techniques to enhance mathematical modeling for dashboard illustration of the Gantt chart, logic network, pert chart, product breakdown structure (PBS). The critical path is an extension of the PRET approach of algorithms for scheduling project activities. A project's required course represents the most extended sequential project activities for completion. It determines the project's

total duration, milestones, deadlines, and necessary actions for timely completion as practiced by PT1, PT3B, and PT4C.

Correlation With Recent Studies

ICT adoption has been considered from many different theoretical perspectives to understand "why and how" organizations and people adopt ICT tools. One of the most significant challenges in the traditional public sector is the time lag between inception, implementation, and the possible outcomes. In consideration of the unpredictable nature of today's complex environment, the contingency theory is applicable. According to Joslin and Müller (2015), the contingency approach as a theoretical perspective was used as a model to introduce a new project management methodology in project organizations using ICT software. They were specifically for those organizations faced with environmental contingency factors impacting the outcomes. Some organizations have transitioned project management practice from traditional to Agile governance. PT1A offered a practical example of applying changes aligned to the specific environmental context that factored each software project organization similar to Joslin and Müller (2015). Projects of various sizes and types must tailor their procedures to satisfy the varying project sizes and types.

Although agile allows for a breakdown of risk into manageable chunks for rapid iterative implementation, employees have found IT processes easily adaptable because of the changing dynamism in the external environment (Haddad & Taleb, 2016). The transitional process itself is affected by external and internal contingency factors. Their analysis offered a more precise picture of the effects of changing project methodology

(Joslin & Müller 2015). Besides, a project's required course represents the most extended sequential project activities for completion, determining the project's total duration, milestones, deadlines, and necessary actions for timely completion. The critical path analysis is an extension of the PERT approach of algorithms for scheduling project activities.

Despite how the strategies are connected, the fundamental questions related to "why and when" the strategies are needed. Besides, how to communicate through the IoT technologies and "what" new values they can bring to enhance PM disciplines and environments (Ghosh et al., 2018). The confluence of new technology such as the internet of things (IoT), artificial intelligence (AI), and even disruptive technologies are tools for adoption. Wu et al. (2018) considered the life cycle of mega infrastructure projects; they emphasized the current developments and future directions of new models using computational algorithms. While project challenges through globalization are akin to the increasing role of complexity, AI and IoT advancement will provide new solutions, tools, and support to project managers' implementation of PM disciplines within the changing environments.

The re-engineering IT collaboration process aids in the transformation of project outcomes (OECD, 2017b). Organizations must consider being flexible to empower their people to make changes by enabling them to master different working methods and become well-rounded professionals with elevated power skills (PMI, 2021). Chatman et al. (2014) found that employees were generally willing to adapt to technological changes. Similarly, PT4C opined that those specialized ICT tools had improved performance,

especially in stable and structured workplace culture. Participants PT4 C & PT2B explained their project's smooth working processes and shared documentation supporting their success. Culture shapes organizations' decisions and guides action, which drives individual behavior. A lack of cultural awareness may restrict project managers' actions based on their members' experiences, creating a unique organization's culture (PMI, 2017). PT2B spoke of team members being younger engineers who were very computer savvy, illustrating their willingness to work with the new and emerging ICT changes. Whatever the model, the emphasized focus must be on business problems and their impact on success. According to PT4C, a typical mistake is to focus on the IT concepts such as machine learning or linear regressions. Applying linear regression may predict how the business will perform; such practice tools are acceptable technologies. The focus, therefore, must remain on the underlying business challenges that need solving. Similarly, PT2B advocated, like Waheed (2016), that project management recognition comes from the authorized body- PMI, hence the need for PMBOK and its subsequent editions.

The most ordinarily selected tool for the Waterfall model is the Gantt chart that visualizes subtasks, dependencies, and project stages as it progresses through the project life cycle. The participants underscored the application in practice from the interview, and PT2B explained how agile project management technologies, e.g., Scrum, allow for scope expansion as the project progresses. PT3B describes the agile approach as tailored for the IT project environment. PT2B found applicable IT Infrastructure Library (ITIL) as a practical framework for implementing project processes. For example, PT2B opined

that service requests and incident management provided data-driven decision-making that efficiently operated with technology. In comparison, researchers found that seasoned practitioners were effective with tools, techniques, and processes to align projects successfully (Floricel et al., 2016): Rendering a timely and efficient project completion.

Early IT adoption presents agility for up-to-date feedback of what does as against what does not. Throughout project implementation, the IT adoption is so that government officials can quickly build upon successes and learn from the little challenges. PT1A contended that documentation support must be accompanied by technical resources or agile project management techniques with less comprehensive reporting requirements for adoption. Employees with high self-efficacy perform better and are more persistent in task completion, developed through information technology, a suitable tool for adaptation amid complexities (OECD, 2017b). PT5D contended that IT provides sound reinforcement through training. The training skills obtained are shown in employees with high self-efficacy who perform better, are more persistent, and exert better task completion, according to PT1A.

Alignment of Findings to Contingency Theory

The contingency theory explains organizational behavior based on contingent factors – with the best potential fit connecting the organization, its environment, and the diverse sub-systems. According to Joslin and Müller (2016), the best use of the contingency approach is to correct low success rates by optimizing project planning and control. Interestingly, a dated but seminal study found that some performance tools were no longer entirely relevant. For example, in 25% of the examined projects, Khazanchi

(2005) found only three areas were held helpful throughout the project cycle: communication, stakeholder management, and integration, all qualitative and behavioral.

Further, studies showed that organizations experience limitations in their PMMs, whether in-house or off-the-shelf solutions. However, the organization's business strategy drives the PPM's method, especially with innovation (Armenia et al., 2019; Berggren, 2019). In applying the project management methodology (PPM), a partial application can dictate the use of a subset of an already established PMM. While other elements are not PPM-related, their application may suffice in achieving the desired project outcomes amid uncertainty (Qazi et al., 2020). For PT1A, PRINCE2 and other methodologies are regularly monitored by their respective governing mechanisms and donor partners, supplemented by Agile-Scrum methodology when and where required. According to PT1A, "The hybrid methodology allows for a flexible framework that can readily be tailored to any project type or size, associated with the work environment, and finalized within an agreed-on timeline." Understanding the governance paradigm and considering what may give rise to the evolution of the organization's PMM - may provide insights to the program or project portfolio manager concerning the project management skills, especially the experience required for a successful project outcome (Joslin & Müller, 2016). Because projects are novel by definition, project managers must tailor their project processes to accommodate the projects' outcomes for alignment with organizational objectives.

The contingency approach advocates no single correct method of doing things; instead, it decides the best solution, demanding a different approach for every exogenous

situation: Volatility, uncertainty, complexity, and ambiguity (VUCA) (Pace, 2019). Since the best way to organize depends on the nature of the environment, the contingency theory must demonstrate the management needs for project organizations. Standardized and formalize management tools are considered more efficient, according to George et al. (2019). Burns and Stalker (1961) brought attention to one crucial perspective of standardization within organizations' need for clear goals. For PT3B, when goals are clear in communication, they lead to calculable outcomes relative to those goals. In turn, it presents easier use of the management tools geared toward goal formulation and implementation. Accordingly, PT1A suggested developing a public website to map the location and track the project progress, providing transparency and accountability in promoting the results' visibility.

The contingency theory establishes an inherent linkage between projects (that are unique and naturally unpredictable) and the contingency theory (advocates a unique approach to conditions). While the participants' necessity of having a standardized framework for projects arises, they agreed that the standard project structure requires the deliverables to be well defined within the project cycle phase. For example, PT5 found that having measurable outcomes in his project was related to a higher uptake of performance measurement tools. According to Khazanchi (2005), the contingency approach facilitates organizational performance through standardization and formalization for efficiency and scale advantages using ICT tools. Besides, the chosen framework should be flexible in sustaining the work with minimum bureaucracy. The phrase “administrative delays” was used to illustrate the challenges of a bureaucratic

framework. PT2B opined that the process requires a match between the environmental characteristics and those of the organization for project success. This match in the contingency approach is called the “fit”; the better the fit, the higher the performance. Therefore, a perfect and workable match is in the use of the contingency theory.

Applications to Professional Practice

Despite the adoption and application of modern project management methodologies, techniques, and tools by public project leaders and practitioners for project implementation, infrastructure and construction projects are still failing at an alarming rate (Aljohani et al., 2017). The findings and recommendations conferred in this study, berthed on the vast body of project management knowledge from experienced practitioners, may become the strategic impetus for PSIP management. Public sector practitioners, project executives, and policymakers can strengthen their project management practices and policies, ultimately maximizing their project management performance. Improved project management performance can also enable a higher level of benefits realization through end users' satisfaction, measured against the improved citizens' living standards. According to Kiehne et al. (2017), improved project performance creates a competitive advantage that drives organizational business success. Besides, successful project fulfillment may also lead to higher returns on investment - measured in the end users' satisfaction for governments. The return on investment must improve Calderon et al.'s 10% investment findings, which only yield one percentage on the returned investment.

Trevor and Varcoe (2016) discussed a unique method for testing organizational alignment. The researchers found two practical holistic perspectives - the strategic support for the fulfillment of the organization's purpose, and the organization supports the achievement of the business strategy. The plotted answers formed a matrix across the four quadrants that posed a distinct leadership challenge—volatility, uncertainty, complexity, and ambiguity (VUCA). In addition, the identified external variables have been questionable in practice and rendered some of PMI's tools and techniques problematic and, in some instances, inadequate, according to Cristóbal et al. (2018). The focus is two-prong, managing the iron triangle deliverables and simultaneously aligning the outcomes for societal benefits, representing a culture change for the government's provision of public services. The strategy's success may be achieved through effective benefits identification, realization, and management by implementing or enhancing a benefits realization program.

However, complementing the tools and techniques can blend the organization's intent with the end users' maturing benefits realization (PMI, 2017). New technology and advanced mathematical computation improved megaprojects construction, according to Wu et al. (2018). As more devices, mathematical modeling, and information technology become available, citizen satisfaction will improve from maturing benefit realization. In addition, the appropriateness of the application will improve project fulfillment, rendering a quick resolution to the anticipated problems concerning project alignment with organizations' strategies (Joslin & Müller, 2016). While sufficient buy-in from stakeholders, particularly the government, may maximize projects' outcomes. The buy-in

allows for preventative actions where necessary or remedial measures require government executives to intervene and correct projects that stray from their intended baselines during execution (Khan, Memon, & Ahmad, 2019).

In practice, a seemingly popular mapping tool is the balanced scorecard: A robust control framework that measures performance from both a financial and non-financial standpoint presenting a balanced view of the internal business processes, along with financial and learning, coupled with customer satisfaction growth (Singh & Sethi, 2017). The fundamental questions in project execution concern the projects' milestones and deliverables and the expectation of their realization. What is needed is a management system that can look backward and forward (with leading and lagging indicators). The existing measurement indications of performance are not sufficient. Still, they must predict tomorrow's performance by demonstrating how spending on strategic projects today will improve future impact (Singh & Sethi, 2017). The Balanced Scorecard is the closest management tool to suffice for that "crystal ball" approach.

Implications for Social Change

Organizational leaders can create positive social change from the shared value that derives socio-economic benefits. While citizens generally do not thoroughly examine their governments' fiscal expenditures, the result is that government gets a free pass on their capital expenditure. Therefore, project misalignment will affect those other businesses with strategies linked to completing the public project. A project may create value when its satisfaction is derived socially and environmentally, bringing positive social change by achieving allocative efficiency in a welfare sense to society (Santhosh &

Baral, 2015). The community's influence will modify the project portfolio to enhance living standards and cultural changes across those individuals' lives (Greenfield, 2018). According to Stephan et al. (2016), positive social change is a transformational means of developing society's well-being. The realization of its social impact is at the citizen user experience of the public sector investment benefits. Information concerning the government's proposed investment with expected outcomes should be disclosed for public scrutiny to improve transparency and accountability.

The positive social impact from effective strategy alignment can be attributed to improved PSIP's organizational performance, hence, the communities' infrastructural development and economic development. The enhanced project performance will positively influence the growth in the country's GDP. The effect is that government would see a reduction in wasteful expenditure of the taxpayers' money. In addition, the success of public investments increases productivity in the other sectors with the appropriate linked investments, supporting long-term economic growth with higher benefit realization for citizens. The collective improvement in organizations contributes to the national economy and enhances the country's GDP performance.

Given the unique challenges public investment faces, finding the balance for a functional alignment relationship between government strategy and successful project outcomes may provide new critical success factors for public sector investments. More importantly, there are often competing interests with governments' strategy management approach for resources at the national sectoral levels, hence the need to be prudent. The social change may create a new project management model with implications through the

project management office. Such an office supports a unified project portfolio management practice; attaining higher project maturity levels improve project success rates in complex environments. According to Christoph and Spang (2014), the projects' complexity determines the "ideal" level of maturity modeling.

Recommendations for Action

The findings of this study may serve well for those government ministries and agencies whose project policymakers and project executives are involved in PSIPs. In addition, project executives and managers encountering poor project infrastructure execution would find these findings helpful in understanding likely gaps or deficiencies in the system. The strategies to remedy challenges in public infrastructure project lies in the governance mechanisms to gain project fulfillment. It requires the development of a new and different project management path for improved project performance. From the findings and conclusions, I propose the following recommendations.

An organized and phased approach will support linkages in significant infrastructure investment through the government's quest for economic growth and development. A scattergun approach to investment may result in expensive infrastructure with few benefits. Holistically, the government should create an overall framework for its capital investments, perhaps a national infrastructure strategy. The project cycle management unit at the Ministry of Finance may become more active in coordinating public investment in line with a national strategy. Besides, a national infrastructure development (NDP) strategy will be helpful, which identifies the next stage in infrastructure investment. A multi-year investment plan can form the primary tool for

determining the country's public investment. Monitoring the NDP's objectives will require a dedicated information system that keeps track of the projects' lifecycle and requires the use of performance-based budgeting (PBB). In comparison, PT3B suggested the mechanism “aligning goals and subordinate objectives throughout the organization to increase organizational performance.” Those initiatives will help the government’s agencies identify and highlight policy changes required to encourage project fulfillment.

Projects’ success in the traditional sense is to achieve targets with planned objectives, reviewed from the iron triangle (cost, time, and scope) and measured from the project closeout report. However, those variables only account for 60% of a project's success, according to Serrador and Turner (2015). The project's benefits are the responsibility of the project managers. A recommendation is for managers to establish a mechanism for managing these benefits through benefit registers, benefits realization plans, KPIs, and lessons learned from the closeout reports. While PMI tools may pose limitations, a helpful technique is to blend the tools with societal satisfaction, which helps determine project maturity's benefits. In addition, practitioners must ensure adaptive procedures for critical issues at the work breakdown structure level. The adaptive procedures include reviewing the historical project data, lessons learned, and analysis of the project environment using appropriate management analysis tools.

Public sector project managers should pay more attention to complexities, especially those affecting megaprojects. As Böhle et al. found, a new way to deal with uncertainty and complexity in projects. The researchers observed that it requires a fundamental re-orientation of ICT tools in project management. A requirement that

allows project practitioners to adopt software tools that positively impact project completion. While some of the projects' consultants and contractors might lack the scale to invest in artificial intelligence (AI) or machine learning solutions, they can still sort data by spreadsheets. The use of AI is an exciting prospect for megaprojects' management, especially in the decision support management for "Big Data." Through planning and delivery, project teams, quality, risk, and knowledge and resource management, AI involvement in projects through planning and delivery may help predict future outcomes (Ong & Uddin, 2020). As more devices and technologies become available, the application's appropriateness will improve project fulfillment. Using project management tools effectively offers ways to track progress and manage time for successful projects. For example, project managers generally use a technique like the PERT, whose method helps calculate the timeline throughout project scoping. The latest tools and planning techniques, software, and risk management measures are excellent recommendations.

The empirical literature on achieving alignment is developing; it can be described in its current form as scanty (Zolfaghari et al., 2017). Therefore, organizations are required to give more attention to strategically increasing these benefits from applying ICT. While risk mitigation can significantly improve with ICT tools, technology-related benefits have high driving power, with strategic benefits for the project team. According to the respondents, the current approaches tend to be narrow. At the same time, the general focus has been more technique as ICT has not always worked well in project practice. The challenge suggests that the conventional system has done well for more

senior and seasoned practitioners, averse to formal project management methodology. My recommendation is for the necessary application of IT training for project practitioners using ICT tools.

Considering complexity and uncertainty with PMBOK techniques tailored to public sector employers is instructive. The benefits of ICT adoption for infrastructure project management requires a developed model to form an essential component of the benefits management plan, leading to the strategic adoption of ICT. Boonstra and Reezigt (2019) illustrated a practical use that derived benefits from a front-end application. Their model allowed for identifying an objective approach that measures the degree of complexity and predictability by assessing its internal and external context at the front-end of operations. This recommended model may help project practitioners understand and evaluate project designs based on a thorough pre-studied appraisal. The recommendation is a practice that is more likely to succeed against a less systematic analysis of reality. The general idea behind megaprojects implementations is geared strategically towards sustainability and development, linking other sectors for citizens' satisfaction. They must be successful in operational terms, achieved mostly when the projects underwent up-front/ frontend external quality assurance (Volden & Samset, 2017).

An excellent recommendation for action is closing the project management capacity gap for megaprojects before making such investment decisions. The level of experience will ensure that the project practitioners possess the attitude that warrants megaproject success. Again, training is helpful and mandatory. The prevailing view of

project management is morphing continually in response to the changing demands and developing technology, which holds the future topography of project management. Bridging the knowledge gap for the increasingly sophisticated applications of technology will help to streamline current industry-standard procedures.

Business organizations tend to have more projects than program portfolios, and projects are managed by an enterprise project management office (EPMO), according to Hyväri (2016). In contrast, governments must recognize that they have a significant number of programs. Therefore, like the business management model that uses EPMO, governments can create program portfolios by establishing a program management office (PMO). An organization's long-term directional changes should reflect the planning strategy through a project planning office. Nevertheless, in a conducted PMI survey, less than half of the organizations have EPMO's. Nevertheless, only 44% of those EPMOs had aligned organizational strategies (PMI, 2016).

Even though projects are the basic building blocks of a country's infrastructural development, they are often perceived as government processes and not functional. It makes the project management/government strategy alignment even more difficult. Effective strategic alignment provides checks and balances in each phase of the project cycle. A recommendation is for the stage-gate approach similarly advocated by Volden and Andersen (2018). A practical consideration is a hierarchical system that explains the relationship between the PSIP using a three-stage model: The cabinet for policy direction, the sectoral ministries to facilitate the policy, and the executing agency to deliver the project, as per the findings of Volden and Andersen (2018).

The findings of Wang et al. (2018) provided practical recommendations for strategic alignment. PMBOK aims to support project managers in their project objectives by aligning them with the organization's strategic plans. PMBOK assumes that project managers may identify patterns and generalizations throughout their projects (PMI, 2017). The assumption is not a stand-alone approach but one accompanied by a project management office (PMO), as against what currently obtains - project execution units (PEU) for individual projects. The PMO holds significant knowledge management that may help align and focus on achieving its citizen's government vision. The PMO's in their centralized function operates at the strategic level as the intermediary between the executive and the project management. By carefully considering its portfolio, the effectiveness is measured by mapping a direct line back to the overall government performance's success. Projects managed from a portfolio basis had 27% more successful projects, while 42% fewer projects were without scope creep (PMI, 2017). While portfolio management focuses on achieving organizational strategy objectives, measured by the investment realization that benefits the end-users. Each project (component) of a Portfolio must be viable, with clearly stated measurable benefits; they must be quantifiable and linked to the government's objectives. With taxpayers frequently demanding a reduction in wasteful spending, public investments expenditure is under growing immense public scrutiny (PricewaterhouseCooper, 2017). It would help identify and gather the projects that will yield the most valuable benefits for achieving project outcomes according to the political objectives. The recommendation is to create a project management office (PMO), the agency responsible for all programs and norms to develop

the project management principles for all public sector investments. The PMO will seek to avoid an imbalance between all governmental programs, to establish a prioritization system (strategic level) and the project management unit (strategic and tactical), according to Hyväri (2016). Indeed, office development will help improve project management maturity and project management culture in society.

In business practice, the consideration of international standardization is the ISO standards, which support all businesses and their global coordination to avoid abuses. Similarly, project management also has guidance in PMBOK 6th edition, among others, for standardization in project management (Ferrell & Ferrell, 2016). The contingency perspective helps achieve efficiency through formalization and standardization. It efficiently maximizes projects ' outcomes when blended with the management tools (George et al., 2019). While the more critical factor for the project's success is the incompleteness of PMM concerning the project's efficiency and quality, project managers would need to tailor project-specific methodologies (Joslin & Müller, 2015). The strategic importance of resources and capacity for competitive advantages occurs when the parties integrate into a structured approach. The recommendation, therefore, is for the governments' project executing agencies to consider developing a full format or a template for project scope development before project implementation. It starts with a concept note that enables the creation of the project charter - a document that considers the following details to include; (a) the justifications for the project, (b) the project objectives, (c) time, cost, and schedule, (d) critical milestones with deliverables, (e) acceptance criteria, (f) constraints, and assumptions, (g) potential issues or risks, and (h)

organizational requirements and resources. Project managers must continue seeking personal development to maximize their project management skills and adapt alignment strategies from the study findings'.

Over the years, professional institutions developed several project management processes and procedures for application in various industries and project management needs (Kononenko & Lutsenko, 2018). The recommendation would involve integrating the project management processes into every stage of the project's process life cycle to yield sustainable management practice. Such effort will allow the project life cycle's efficiency to influence all the standard project management procedures concerning time, cost, quality, and project risk against the external environment. Armenia et al. (2019) identified five critical factors that help in the practice of project management sustainability; an approach I will also recommend for project practitioners (a) corporate policies and procedures, (b) resource management, (c) life cycle orientation, (d) stakeholders' engagement, and (e) organizational learning.

Besides bilateral and multilateral financing, governments' fiscal policy (taxation) is the primary source of public investment. Empirically, the influence of quality and efficiency in public investment spending concerning productivity and economic growth was considered by Calderon et al. (2015). While the new public management model forces public administrators to accept the responsibility of serving citizens by acting as stewards of public resources embracing effective decision-making through accountabilities enhances project success (Joslin & Müller, 2016). As a recommendation, the anticipated increase in government revenue from the exploits of oil and gas should be

accompanied immediately by a comprehensive public investment plan aligned with the other sectors' development. The uncertainty about COVID-19 has dampened private investment; public investment can encourage investment plans that might otherwise be postponed. Ascertaining linkages in the country's development drive is the reason for the recommendation.

Walden University's scholarly works will be the home for this study. It will provide a mechanism that enables scholars and students interested in government strategic alignment in project management practices to access the study findings. Besides, I will share this study's results with the government (Ministries of Public Works and Finance), the participants, project practitioners, and any other interested parties through various means, including but not limited to publications, professional journals, scholarly literature, seminars, conferences, and training programs.

Recommendations for Further Research

Advocates suggested reconsidering the research streams considering Morris' management for project framework to adapt and maintain better alignment (Pinto & Winch (2016). Researchers are now promoting the stage-gates approach to understand better public project governance and strategy alignment (Volden & Andersen, 2018). Further strides concerning alignment were evident in the autonomy phase of the project lifecycle to the exclusion of the other two, cascading and autonomy (Zolfaghari et al., 2019). Therefore, considering governments' upfront roles in determining project portfolios, the allocation phase is worthy of future research since it seeks to mitigate the challenges of complexity and uncertainty. While my study provides a contemporary

approach to the alignment of government strategy with project outcomes, the findings, along with Volden and Andersen's stage-gate practice, can be integrated to determine higher benefits realization maturity in future research.

According to Khan, Memon, and Ahmad (2019), organizations with greater maturity modeling could provide a roadmap to a higher maturity level. While the study only accounted for four organizations, the lack of random selection in the chosen participants may potentially pose validity issues due to possible selection bias. Future researchers must consider a more countrywide comprehensive array of successful projects delivered by broader perspectives and experienced project managers coupled with varying and incremental government strategies. They will better explain public investment projects' outcome alignment with government strategies.

Reflections

Although dated, I found exciting the seminal works of Adeyemi and Idoko (2008). The researchers offered a perspective that accurately explains the dilemma faced by developing countries concerning public infrastructure projects. The challenges were all rooted within the iron triangle concept of time, scope, and budgetary allocation. To date, those challenges have not subsided but instead compounded with external variables of complexity and uncertainty, which continues the misalignments in stakeholders' expectations (Khan, Memon, & Ahmad, 2019). While my study offers a fresh and contemporary perspective of how strategic alignment can maximize project outcomes. The realization is that project practitioners find tools and techniques used in management to maximize project success, especially in complexity and uncertainty. The external

organizational environment has become more complex and needs other considerations besides the "iron triangle" concept for project success. Those reflections are based on the notion that governments generally take on multiple mega projects whenever they have more fiscal space (GDP). The advent of Guyana's newfound oil and gas-energy sector has created a more significant consideration for my curiosity, given its effect on an increasing GDP.

While revenue growth positively correlates with citizens' pressure to improve government services, those projects must also create linkages in the private sector. A developed and supported private sector is quite impactful for a country's socio-economic and environmental sustainability. I also realized that most project management participants are foremost engineers, with some project management training (PMI certified). The conducted study environment allowed the respondents to express themselves freely, which enabled me to understand the strategies project managers use to gain alignment. The study findings changed my personal biases and preconceived thoughts and values of public project managers' approaches to aligning project outcomes with governments' strategies to maximized project performance. I have gained knowledge and understanding from the expert practitioners, and the interactions improved my communication and interpersonal skills.

For those reasons, strategic alignment of projects and their evaluation and selection process becomes more complicated, requiring more updated analytical and managerial skills and models than those previously used. The findings provided an in-depth understanding of the research question in developing multiple methods to align

project outcomes with government strategies to maximize project performance. On reflection, the experience provided me a better understanding and appreciation of the research process, which positively changed my personal biases and preconceived opinions.

Conducting the doctoral pursuit, particularly the literature review, has improved my understanding and knowledge of academic research work, critical thinking, problem-solving approaches. Initially, I learned that students tend to overthink the APA style of writing, leading to mental blocks (Van Note Chism & Weerakoon, 2012). Instead of focusing on the style that can create a phobia, I found that early adoption provided success. Besides, the APA publication manual spells out the requirements, which I habitually followed to instill guidelines for scholarly writing.

Conclusion

The qualitative multiple case study explored effective strategies that public sector project managers used to align the project outcomes with government strategies to maximized project performance. The research method employed was a semistructured interview. The five participants came from a specified population group of public sector project managers who successfully aligned their projects' outcomes with government strategies and worked for four project-based units within the geographic administrative region of Demerara/Mahaica (Region 4) Guyana. Member checking, a qualitative researcher's technique, enhanced data collection evidence that determined the study's data validity and saturation (Saunders et al., 2015; Yin, 2018). Research has established that

an aligned project is one in which at least 80% of its expected outcomes were aligned with the organization's strategy (PMI, 2017).

In addition to the contingency theory as the conceptual framework which helped in understanding the context of the research and through the research question; four themes emerged from the analyzed data on public project governance, concerning their aligned outcomes with government strategies to maximized project performance: (a) Government/ executive commitment and support for the project teams, (b) efficient project management skills, (c) aligning national strategy with project processes, (d) managing public project processes with ICT tools.

Additionally, using government strategies will incorporate feasibility analysis, design, appraisal, approval, organization, operation, control, evaluation, and follow-up. Throughout a project cycle, skilled managerial functions become the project managers' thrust to realize the projects' outcomes align with government strategies to maximize project success. Project managers may consider a register for risk lessons learned after closing each risk management process phase. By doing so, future project managers would gain more knowledge on what was successful or not.

The study's findings could conceivably add to public sector project practice and may undoubtedly inspire social change. As government sectors compete for fiscal expenditure, project management alignment can ensure purposefully measured public spending- the gains from the investment return. Faced with continuous public scrutiny enabled by digital technology- the government needs a clear mission to analyze their portfolios to ensure aligned with their strategies. The PMOs pursue alignment and

maximized project success performance, creating end users' benefits while improving other citizen's support services that may boost governance.

References

Abdelouahab, E., &. Bouchra, L. (2020). Measuring change readiness for implementing a project management methodology: An action research study. *Academy of Strategic Management Journal, 19*(1), 1-17. https://doi.org/10.4135/9781412985703.n6

Abou-Hafs, H., Boutora, F., & Smaili, N. (2019). Identification and classification of the key competencies for social project managers in Agadir, Morocco. *Archives of Business Research, 7*(5), 277-288. https://doi.org/10.14738/abr.75.6585

Adeyemi, L. A. & Idoko, M. (2008). *Developing local capacity for project management: Key to social and business transformation in developing countries.* Paper presented at PMI® Global Congress 2008—EMEA, St. Julian's, Malta. Project Management Institute.

Adhabi, E. A., & Anozie, C. B. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education*, *9*(3), 86. https://doi.org/10.5296/ije.v9i3.11483

Ahmad, Z., Thaheem, M. J., & Maqsoom, A. (2018). Building information modeling as a risk transformer: An evolutionary insight into the project uncertainty. *Automation in Construction, 92*, 103–119. https://doi.org/10.1016/j.autcon.2018.03.032

Ahmed, R. (2018). Leadership Competencies Affecting Projects in Organization. *Organizational Culture*. https://doi.org/10.5772/intechopen.80781

Alase, A. (2017). The interpretative phenomenological analysis (IPA): A Guide to a good

qualitative research approach. *International Journal of Education and Literacy Studies*, *5*(2), 9. https://doi.org/10.7575/aiac.ijels.v.5n.2p.9

Allen, M. (2017). *The sage encyclopedia of communication research methods* (Vol. 1-4). Thousand Oaks, CA: SAGE Publications. https://doi.org/10.4135/9781483381411

Alpi, K. M., & Evans, J. J. (2019). Distinguishing case study as a research method from case reports as a publication type. *Journal of the Medical Library Association*, *107*(1). https://doi.org/10.5195/jmla.2019.615

Alqaisi, I. F. (2018). The effects of stakeholder's engagement and communication management on projects success. *MATEC Web of Conferences, 162*, 02037. https://doi.org/10.1051/matecconf/201816202037

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

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). https://doi.org/10.1037/0000165-000

Amin, S. & Kamal, Y. (2016). Impact of natural-born leader qualities on the project team performance: The influences of demographics (gender and age). *International Journal of Management, Accounting, and Economics, 3*(5), 306-318. http://www.ijmae.com

Anderson, V. (2017). Criteria for evaluating qualitative research. *Human Resource Development Quarterly, 28*(2), 125-133. https://doi.org/10.1002/hrdq.21282

Arbabi, H., Salehi-Taleshi, M.-J., & Ghods, K. (2020). The role of project management

office in developing knowledge management infrastructure. *Engineering, Construction and Architectural Management*, *27*(10), 3261–3287. https://doi.org/10.1108/ecam-11-2019-0600

Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods, 18*, 1-8. https://doi.org/10.1177/1609406919874596

Arezki, R., Bolton, P., Peters, S., Samama, F., & Stiglitz, J. (2017). From global savings glut to financing infrastructure. *Economic Policy, 32*(90), 221–261. https://doi.org/10.1093/epolic/eix005

Ari, I., & Koc, M. (2020). Economic growth, public and private investment: A comparative study of China and the United States. *Sustainability, 12*(6), 2243. https://doi.org/10.3390/su12062243

Armenia, S., Dangelico, R. M., Nonino, F., & Pompei, A. (2019). Sustainable project management: A conceptualization-oriented review and a framework proposal for future studies. *Sustainability, 11*(9), 2664. https://doi.org/10.3390/su11092664

Armenia, S., Dangelico, R. M., Nonino, F., & Pompei, A. (2019). Sustainable project management: A conceptualization-oriented review and a framework proposal for future studies. *Sustainability*, *11*(9), 2664. https://doi.org/10.3390/su11092664

Auerbach Publications.

Awiagah, R., Kang, J., & Lim, J. I. (2016). Factors affecting e-commerce adoption among SMEs in Ghana. *Information Development, 32*, 815-836.

https://doi.org/10.1177/0266666915571427

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

Bakhshi, J., Ireland, V., & Gorod, A. (2016). Clarifying the project complexity construct: Past, present and future. *International Journal of Project Management, 34*, 1199-138 1213. https://doi.org/10.1016/j.ijproman.2016.06.002

Bansal, P., Smith, W. K., & Vaara, E. (2017). From the editors: New ways of seeing through qualitative research. *Academy of Management Journal, 61*(4), 1189–1195. https://doi.org/10.5465/amj.2018.4004

Berggren, C. (2019). The cumulative power of incremental innovation and the role of project sequence management. *International Journal of Project Management, 37*(2019), 461–472. https://doi.org/10.1016/j.ijproman.2019.01.014

Berzisa, S., & Rasnacis, A. (2017). Method for adaptation and implementation of agile project management methodology. *Procedia Computer Science, 104*, 43-50. https://doi.org/10.1016/j.procs.2017.01.055

Bielenberg, A.,Williams, J., & Woetzel, J. (2020). Four ways governments can get the most out of their infrastructure projects. *McKinsey Global Institute*. https://www.mckinsey.com/industries/public-and-social-sector/our-insights/four-ways-governments-can-get-the-most-out-of-their-infrastructure-projects

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

Boehm, C. E. (2020). Government consumption and investment: Does the composition of purchases affect the multiplier? *Journal of Monetary Economics*, *115*, 80–93. https://doi.org/10.1016/j.jmoneco.2019.05.003

Bolzan de Rezende, L., & Blackwell, P. (2019). Revisiting project complexity: A new dimension and framework. *The Journal of Modern Project Management, 6*(3). https://doi.org/10.19255/jmpm413

Bonello, M., & Meehan, B. (2019). Transparency and coherence in a doctoral study case analysis: Reflecting on the use of NVivo within a 'framework' approach. *The Qualitative Report, 24*(3), 483-498. http://nsuworks.nova.edu/tqr/

Boonstra, A., & Reezigt, C. (2019). Complexity-predictability project diagnosis model. *Procedia Computer Science*, *164*, 337–342. https://doi.org/10.1016/j.procs.2019.12.191

Bredillet, C. (2014). Ethics in project management: Some Aristotelian Insights. *International Journal of Managing Projects in Business, 7*(4), 548-565. https://doi.org/10.1108/IJMPB-08-201-0041

Briney, K., Goben, A., & Zilinski, L. (2015). Do you have an institutional data policy? A review of the current landscape of library data services and institutional data policies. *Journal of Librarianship & Scholarly Communication, 3*(2), 1-25. https://doi.org/10.7710/2162-3309.1232

Buengeler, C., Homan, A. C., & Voelpel, S. C. (2016). The challenge of being a young

manager: The effects of contingent reward and participative leadership on team-level turnover depend on leader age. *Journal of Organizational Behavior, 37*(8), 1224-1245. https://doi.org/10.1002/job.2101

Bulman, D.J., Kolkma, W., Kraay, A. (2015).Good countries or good projects? Comparing macro and micro correlates of World Bank and Asian Development Bank project performance. https://openknowledge.worldbank.org/bitstream/handle/10986/21859/WPS7245.pdf?sequence=2

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

Calderón, C., Moral-Benito, E., & Servén, L. (2015). Is infrastructure capital productive? A dynamic heterogeneous approach. *Journal of Applied Economics. 30*(2), 177-198. https://doi.org/10.1002/jae.2373

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report, 21*(5), 811-831. http://nsuworks.nova.edu/tqr/

Chang, J. T. (2017). Mutual monitoring of resources in an enterprise systems program. *Project Management Journal, 48*(1), 100-115. https://www.pmi.org/learning/publications/project-management-journal

Chatman, J. A., Caldwell, D. F., O'Reilly, C. A., & Doerr, B. (2014). Parsing organizational culture: How the norm for adaptability influences the relationship between culture consensus and financial performance in high-technology firms.

Journal of Organizational Behavior, *35*(6), 785–808. https://doi.org/10.1002/job.1928

Chauvet, L., & Ferry, M. (2020). Taxation, infrastructure, and firm performance in developing countries. *Public Choice*, *187*(3-4), 455–480. https://doi.org/10.1007/s11127-020-00788-4

Chei-Chang, C. (2009). Effects of concept mapping strategy on learning performance in business and economics statistics. *Teaching in Higher Education, 14*(1), 55-69. https://doi.org/doi:10.1080/13562510802602582

Chiarini, A. (2016). Corporate social responsibility strategies using the TQM: Hoshin kanri as an alternative system to the balanced scorecard. *The TQM Journal, 28*(3), 360-376. https://doi.org/10.1108/TQM-03-2014-0035

Chowdhury, I. A. (2015). Issue of quality in a qualitative research: An overview. *Innovative Issues and Approaches in Social Sciences, 8*(1), 142–162. https://doi.org/10.12959/issn.1855-0541.iiass-2015-no1-art09

Christoph, A. J., & Konrad, S. (2014). Project complexity as an influence factor on the balance of costs and benefits in project management maturity modeling. *Procedia - Social and Behavioral Sciences, 119(*19), 162–171. https://doi.org/10.1016/j.sbspro.2014.03.020

Clegg, S., Killen, C. P., Biesenthal, C., & Sankaran, S. (2018). Practices, projects, and portfolios: Current research trends and new directions. *International Journal of Project Management*, *36*(5), 762-772. https://doi.org/10.1016/j.ijproman.2018.03.008

Cole, C. (2017). Project management evolution to improve success in infrastructure projects. *Management Dynamics in the Knowledge Economy*, *5*(4), 619–640. https://doi.org/10.25019/mdke/5.4.09

Coleman, K. (2018). Interprofessional education: Learning with, from, and about one another. *Radiologic Technology, 90*(2), 200-203. http://www.radiologictechnology.org/content/90/2/200.extract

Conceição, S. C. O., Samuel, A., Yelich Biniecki, S. M., & Carter, J. (2017). Using concept mapping as a tool for conducting research: An analysis of three approaches. *Cogent Social Sciences*, *3*(1), 1404753. https://doi.org/10.1080/23311886.2017.1404753

Cristóbal, J. R. S., Carral, L., Diaz, E., Fraguela, J. A., & Iglesias, G. (2018). Complexity and project management: A general overview. *Complexity*, *2018*, 1–10. https://doi.org/10.1155/2018/4891286

Cumyn, A., Ouellet, K., Côté, A.-M., Francoeur, C., & St-Onge, C. (2018). Role of researchers in the ethical conduct of research: A discourse analysis from different stakeholder perspectives. *Ethics & Behavior, 28*(11), 1-16. https://doi.org/10.1080/10508422.2018.1539671

Daniel, B. K. (2019). Using the TACT framework to learn the principles of rigour in qualitative research. *Electronic Journal of Business Research Methods, 17*(3), 118–129. https://doi.org/10.34190/JBRM.17.3.002

Daniel, C. & Ugochuku, N. (2020). Influence of project managers leadership style on project implementation. *International Journal of Business Marketing and*

Management, 5(2), 68-76. www.ijbmm.com

Das, R. C., Das, A., & Ray, K. (2018). Examining Forward and Backward Linkages between Public and Private Investments: A Cross-country Analysis. *Review of Market Integration, 10*(1), 45–75. https://doi.org/10.1177/0974929218761080

Dash, P. (2016). The Impact of Public Investment on Private Investment: Evidence from India. *Vikalpa: The Journal for Decision Makers*, *41*(4), 288–307. https://doi.org/10.1177/0256090916676439

Davies, A., Dodgson, M., & Gann, D. (2016). Dynamic capabilities in complex projects: The case of London Heathrow Terminal 5. *Project Management Journal*, *47*(2), 26–46. https://doi.org/10.1002/pmj.21574

Deleidi, M., Mazzucato, M., & Semieniuk, G. (2019). *"Neither crowding in nor out: Public direct investment mobilising private investment into renewable electricity projects,"* SOAS Department of Economics Working Paper No. 226, London: SOAS University of London.

Denicol, J., Davies, A., & Krystallis, I. (2020). What are the causes and cures of poor megaproject performance? A systematic literature review and research agenda. *Project Management Journal*, *51*(3), 328–345. https://doi.org/10.1177/8756972819896113

Devarajan, S., Swaroop, V., & Zou, H. (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics, 37*(2), 313-344. https://doi.org/10.1016/s0304-3932(96)90039-2

Donaldson, D. (2018). Railroads of the Raj: Estimating the impact of transportation

infrastructure. *American Economic Review*, *108*(4-5), 899–934. https://doi.org/10.1257/aer.20101199

Donaldson, D., & Hornbeck, R. (2016). Railroads and American economic growth: A "market access" approach. *The Quarterly Journal of Economics*, *131*(2), 799–858. https://doi.org/10.1093/qje/qjw002

Dyer, J. H., Godfrey, P., Jensen, R., & Bryce, D. (2016). *Strategic management: Concepts and tools for creating real-world strategy*. John Wiley & Sons

Easterly, W., & Rebelo, S. (1993). Fiscal policy and economic growth. *Journal of Monetary Economics, 32*(3), 417-458. https://doi:10.1016/0304-3932(93)90025-b

Easterly, W., & Rebelo, S. (1993). Fiscal policy and economic growth. *Journal of Monetary Economics*, *32*(3), 417–458. https://doi.org/10.1016/0304-3932(93)90025-b

Eik-Andresen, P., Johansen, A., Landmark, A. D. & Sørensen, A. O. (2017). Controlling a multibillion project portfolio; Milestones as key performance indicator for project portfolio management. *Procedural Social and Behavioral Sciences, 226*(2016), 294-301. https://doi.org/10.101/j.sbspro.2016.06.191

El Khatib, M., Alabdooli, K., AlKaabi, A., & Al Harmoodi, S. (2020). Sustainable Project Management: Trends and alignment. *Theoretical Economics Letters*, *10*(06), 1276–1291. https://doi.org/10.4236/tel.2020.106078

Elton, C. (2018). Scope patrol: Scope creep is on the rise as stakeholder expectations increase. Here's how to keep projects within bounds. *PM Network, 32*(7), 38–45. http://www.pmnetwork-digital.com

Englander, M. (2016). The phenomenological method in qualitative psychology and psychiatry. *International Journal of Qualitative Studies in Health and Well-being, 11*(1), 1-11. https://doi.org/10.3402/qhw.v11.30682

Erceg, A., & Gulam, V. (2018). *Importance of alignment of strategy and project management* [Paper presentation]. Interdisciplinary Management Research XIV Conference, Opatija, Croatia. https://www.researchgate.net/publication/325429664_Importance_of_alignment_of_strategy_and_project_management

Erkul, M., Yitmen, I., & Celik, T. (2019). Dynamics of stakeholder engagement in mega transport infrastructure projects. *International Journal of Managing Projects in Business*, *13*(7), 1465–1495. https://doi.org/10.1108/ijmpb-09-2018-0175

Eshghi, A., Mousavi, S. M., Antucheviciene, J., & Mohagheghi, V. (2019). Earned value analysis approach by extending new key performance indicators in a new framework under a grey environment. *Economic Computation and Economic Cybernetics Studies and Research*, *53*(3), 131–150. https://doi.org/10.24818/18423264/53.3.19.08

European Commission. (2018). Climate change adaptation of major infrastructure projects. A stock-taking of available resources to assist the development of climate-resilient infrastructure. https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/climate_change_major_projects/climate_change_adaptation_of_major_infrastructure_projects.pdf

Ferlie, E. (2017). The new public management and public management studies. *Oxford Research Encyclopedia of Business and Management*. https://doi.org/10.1093/acrefore/9780190224851.013.129

Ferrell, O. C., & Ferrell, L. (2016). Ethics and social responsibility in marketing channels and supply chains: An overview. *Journal of Marketing Channels, 23*(1, 2), 2–10. https://doi.org/10.1080/1046669X.2016.1147339

Fiedler, F. E. (1964). A contingency model of leadership effectiveness. *Advances in Experimental Social Psychology, 1*(1964), 149-190.

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

Frankema, E., Williamson, J., & Woltjer, P. (2018). An economic rationale for the West African scramble? The commercial transition and the commodity price boom of 1835–1885. *The Journal of Economic History*, *78*(1), 231–267. https://doi.org/10.1017/s0022050718000128

Frechtling, D. C., & Boo, S. (2012). On the ethics of management research: An exploratory investigation. *Journal of Business Ethics, 106*, 149-160. https://doi.org/10.1007/s10551-011-0986-7

Fugard, A., & Potts, H. (2015). Supporting thinking on sample sizes for thematic analysis: A quantitative tool. *International Journal of Social Research Methodology, 18*(6), 669-684. https://doi.org/10.1080/13645579.2015.1005453

Fusch, P. I., Fusch, G. E., & Ness, L. R. (2017). How to conduct a mini-ethnographic

case study: A guide for novice researchers. *The Qualitative Report, 22*(3), 923–941. https://nsuworks.nova.edu/tqr/

Fusch, P., & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, *20*(9), 1408-1416. http://nsuworks.nova.edu/tqr/

Fusch, P., Fusch, G., & Ness, L. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Social Change 10*(1), 19-32. https://doi.org/10.5590/JOSC.2018.10.1.02

Gaikwad, P. (2017). Including rigor and artistry in case study as a strategic qualitative methodology. *The Qualitative Report, 22*(13), 3431-3446. https://nsuworks.nova.edu/tqr/vol22/iss13/4

Garemo, N., Hjerpe, M., Mischke, J., Palter, R., & Woetzel, J. (2016). Bridging global infrastructure gaps. *McKinsey Global Institute*. https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps

George, B., Van de Walle, S., & Hammerschmid, G. (2019). Institutions or contingencies? A cross-country analysis of management tool use by public sector executives. *Public Administration Review*, *79*(3), 330–342. https://doi.org/10.1111/puar.13018

Geyer, R., Jambeck, J. R., & Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science Advances, 3*(7). https://doi.org/10.1126/sciadv.1700782

Glenna, L., Hesse, A., Hinrichs, C., Chiles, R., & Sachs, C. (2019). Qualitative research ethics in the big data era. *American Behavioral Scientist, 63*(5), 560–583.

https://doi.org/10.1177/0002764219826282

Global Infrastructure Hub. (2019). *Leading practices in governmental processes facilitating infrastructure project preparation: A practical guide for governments, informed by a country-lens review of leading practices.* https://cdn.gihub.org/umbraco/media/2344/gih_project-preparation_full-document_final_art_web.pdf

Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th ed.). Pearson.

Gregory, R. W., Kaganer, E., Henfridsson, O., & Ruch, T. J. (2018). It Consumerization and the Transformation of It Governance. *MIS Quarterly*, *42*(4), 1225-1253. https://doi.org/10.25300/MISQ/2018/13703

Guetterman, T. C. (2015). Descriptions of sampling practices within five approaches to qualitative research in education and the health sciences. Forum*: Qualitative Social Research, 16*(2), 1-23. http://www.qualitative-research.net/

Gurara, D., Klyuev, V., Mwase, N., & Presbitero, A. F. (2018). Trends and challenges in infrastructure investment in developing countries. *Revue Internationale De Politique De Développement*, (10.1). https://doi.org/10.4000/poldev.2802

Guyana Redd+ Investment Fund. (2017). *ICT Access and e-Services for hinterland poor and remote communities.* https://www.guyanareddfund.org/index.php/grif-projects/ict-access-and-e-services

Hackett, A., & Strickland, K. (2019). Using the framework approach to analyse qualitative data: A worked example. *Nurse Researcher, 26*(2), 8–13.

https://doi.org/10.7748/nr.2018.e1580

Hansen, L. K., Rode, A. L. G., Friis-Sommer, A., & Svejvig, P. (2019). *Toward a project portfolio management evaluation framework* [Paper presentation]. EURAM 2019 Conference, Lisbon, Portugal.

Harvey, W.S. (2011). Strategies for conducting elite interviews. *Qualitative Research, 11*(4), 431-441. https://doi.org/10.1177/1468794111404329

Hastings, C. S. L., & Salkind, N. J. (2013). *Encyclopedia of Research Design.* Sage Publications

Hays, D. G., Wood, C., Dahl, H., & Kirk-Jenkins, A. (2016). Methodological rigor in qualitative research articles: A 15-year review. *Journal of Counseling & Development, 94*(2), 172–183. https://doi.org/10.1002/jcad.12074

Hazır, Ö., & Ulusoy, G. (2020). A classification and review of approaches and methods for modeling uncertainty in projects. *International Journal of Production Economics, 223*. https://doi.org/10.1016/j.ijpe.2019.107522

Heesen, R., Bright, L. K., & Zucker, A. (2016). Vindicating methodological triangulation. *Synthese, 196*(8), 3067–3081. https://doi.org/10.1007/s11229-016-1294-7

Henry, S. G., Romano, P. S., & Yarborough, M. (2016). Building trust between institutional review boards and researchers. *Journal of General Internal Medicine, 31*(9), 987–989. https://doi.org/10.1007/s11606-016-3721-3

Higman, R., & Pinfield, S. (2015). Research data management and openness: The role of data sharing in developing institutional policies and practices. Program:

Electronic Library and Information Systems, 49(4), 364-381. https://doi.org/10.1108/prog01-2015-0005

Hillson, D., & Murray-Webster, R. (2017). *Understanding and managing risk attitude*. Abington, United Kingdom: Routledge.

Hillson, D., & Murray-Webster, R. (2017). *Understanding and managing risk attitude* (2nd ed.). Routledge. https://doi.org/10.4324/9781315235448

Honig, B., Lampel, J., Siegel, D., & Drnevich, P. (2017). Special section on ethics in management research: Norms, identity, and community in the 21st century. *Academy of Management Learning & Education, 16*(1), 84–93. https://doi.org/10.5465/amle.2017.0023

Horning, T, M. (2017). *Successful Project Management* [Doctoral study, Walen University]. https://scholarworks.waldenu.edu/dissertations/4859/

Houghton, C., Murphy, K., Meehan, B., Thomas, J., Brooker, D., & Casey, D. (2017). From screening to synthesis: Using NVivo to enhance transparency in qualitative evidence synthesis. *Journal of Clinical Nursing, 26*(5-6), 873-881. https://doi.org/10.1111/jocn.13443

Hoxha, L., & McMahan, C. (2019). The influence of project manager's age on project success. *Journal of Engineering, Project, and Production Management*, *9*(1), 12–19. https://doi.org/10.2478/jeppm-2019-0003 https://doi.org/10.1016/S0065-2601(08)60051-9

Hughes, O. E. (2012). *Public management and administration: An introduction*. Houndmills Basinkstoke: Palgrave Macmillan.

Hyväri, I. (2016). Roles of top management and organizational project management in the effective company strategy implementation. *Procedia - Social and Behavioral Sciences, 226*, 108-115. https://doi.org/10.1016/j.sbspro.2016.06.168

Infralatam. (2016). *Economic infrastructure investment data in Latina America and the Caribbean: ECLAC.* http://database.infralatam.info/

International Monetary Fund. (2017). *2017 Article IV consultation—Press Release; Staff Report; and statement by the Executive Director for Guyana* [IMF Country Report No. 17/175]. International Monetary Fund. https://www.imf.org/

Ishmael, O. (2005). The Guyana story: From earliest times to independence. http://www.guyana.org/features/guyanastory/guyana_story.html

Jacobs, F. R., & Chase, R. B. (2017). *Operations and supply chain management* (15th ed.). McGraw-Hill.

Jedwab, R., Kerby, E., & Moradi, A. (2017). History, path dependence, and development: Evidence from colonial railways, settlers, and cities in Kenya. *The Economic Journal, 127*(603), 1467-1494. https://doi.org/10.1111/ecoj.12347

Jitpaiboon, T., Smith, S. M., & Gu, Q. (2019). Critical success factors affecting project performance: An analysis of tools, practices, and managerial support. *Project Management Journal*, *50*(3), 271–287. https://doi.org/10.1177/8756972819833545

Johnsen, Å. (2016). Strategic planning and management in local government in Norway: Status after three decades. *Scandinavian Political Studies 39*(4), 333–365. https://doi.org/10.1111/1467-9477.12077

Joslin, R. (2019). *Project management methodologies, governance, and success*.

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 relationship between project governance and project success. *International Journal of Project Management, 34*(4), 613-626. 143 https://doi.org/10.1016/j.ijproman.2016.01.008

Kandola, D., Banner, D., & O'Keefe-McCarthy, S., & Jassal, D. (2014). Sampling methods in cardiovascular nursing research: An overview. *Canadian Journal of Cardiovascular Nursing, 24*(3), 15-18. https://www.cccn.ca/

Karagiozis, N. (2018). The complexities of the Researcher's role in QUALITATIVE research: The power of reflexivity. *The International Journal of Interdisciplinary Educational Studies*, *13*(1), 19–31. https://doi.org/10.18848/2327-011x/cgp/v13i01/19-31

Kenno, S., McCracken, S., & Salterio, S. (2017). Financial reporting interview-based research: A field research primer with an illustrative example. *Behavioral Research in Accounting, 29*(1), 77–102. https://doi.org/10.2308/bria-51648

Kerzner, H. (2017). Morality and Ethics. *Project Management Case Studies,* 435-463. https://doi.org/10.1002/9781119389040.ch13

Khan, A., Waris, M., Ismail, I., Sajid, M., Ali, Z., Ullah, M., & Hussain, A. (2019). Investigating the practices of project governance in the public sector infrastructure

program in Pakistan. *Advances in Civil Engineering.* https://doi.org/10.1155/2019/7436592

Khan, S., Memon, N. S., & Ahmad, A. (2019). Evaluating organizational project management performance: Empirical evidence from public universities of Khyber Pakhtunkhwa, Pakistan. *International Journal of Academic Research in Business and Social Sciences*, *9*(3), 679-690. https://doi.org/10.6007/ijarbss/v9-i3/5735

Kim, E., Tang, L., & Bosselman, R. (2018). Measuring customer perceptions of restaurant innovativeness: Developing and validating a scale. *International Journal of Hospitality Management, 74*, 85-98. https://doi.org/10.1016/j.ijhm.2018.02.018

Kim, M., & Chai, S. (2016). Assessing the impact of business uncertainty on supply chain integration. *The International Journal of Logistics Management*, *27*(2), 463–485. https://doi.org/10.1108/IJLM-11-2014-0175

Klakegg, O. J., & Volden, G. H. (2017). *Governance in public projects: the Norwegian case.* In R, Müller (Ed.), *Governance and Governmentality for Projects* (pp. 51-67). Routledge Studies in Corporate Governance.

Kononenko, I., & Lutsenko, S. (2018). The project management methodology and guide formation's method. *Institute of Electrical and Electronics Engineers, 2018*, 11-14. https://doi.org/10.1109/STC-CSIT.2018.8526621

Korstjens, I., & Moser, A. (2017). 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

Lawlor, D. A., Tilling, K., & Smith, G. D. (2016). Triangulation in aetiological epidemiology. *International Journal of Epidemiology, 45*(6), 1866–1886. https://doi.org/doi:10.1093/ije/dyw314

Levin, G., & Wyzalek, J. (Eds.). (2015). *Portfolio management: A strategic approach*. CRC Press.

Ling, Y.Y. & Tan, F. (2015). Selection of site supervisors to optimize construction project outcomes. *Structural Survey, 33*(4/5). 407-422. https://doi.org/10.1108/SS-08-2015-0041

Loiro, C., Castro, H., Ávila, P., Cruz-Cunha, M. M., Putnik, G. D., & Ferreira, L. (2019). Agile project management: A communicational workflow proposal. *Procedia Computer Science, 164*, 485-490. https://doi:10.1016/j.procs.2019.12.210

Lübbe, J. (2016). Project finance as a driver of economic growth in Africa. *Civil Engineering, 24(9)*, 55-59. https://www.asce.org/cemagazine

Madsen, D. O., & Slåtten, K. (2015). The balanced scorecard: Fashion or virus? *Administrative Sciences, 5*(2), 90–124. https://doi.org/10.3390/admsci5020090

Maher, C., Hadfield, M., Hutchings, M., & de Eyto, A. (2018). Ensuring rigor in qualitative data analysis: A design research approach to coding, combining NVivo with traditional material methods. *International Journal of Qualitative Methods, 17*(1), 1-2. https://doi.org/10.1177/1609406918786362

Maqbool, R., Ye, S., Manzoor, N., & Rashid, Y. (2017). The impact of emotional intelligence, project managers' competencies, and transformational leadership on

project success: An empirical perspective. *Project Management Journal, 48(3),* 58-75. https://www.pmi.org/learning/publications/projectmanagement-journal

Maqbool, R., Ye, S., Manzoor, N., & Rashid, Y. (2017). The impact of emotional intelligence, project managers' competencies, and transformational leadership on project success: An empirical perspective. *Project Management Journal, 48*(3), 58-75. https://www.pmi.org/learning/publications/projectmanagement-journal

Marshall, C., & Rossman, G. B. (2016). *Designing qualitative research* (6th ed.). Sage Publications.

Martino, L. O., Elvira, V., & Louzada, F. (2017). Effective sample size for importance sampling based on discrepancy measures. *Signal Processing, 131*, 386-401. https://doi.org/10.1016/j.sigpro.2016.08.025

Mayer, I. (2015). Qualitative research with a focus on qualitative data analysis. *International Journal of Sales, Retailing & Marketing, 4*(9), 53-67. http://www.ijsrm.com

McAdam, R., Miller, K., & McSorley, C. (2019). 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

Melé, D. (2016). Understanding humanistic management. *Humanistic Management Journal*, *1*(1), 33–55. https://doi.org/10.1007/s41463-016-0011-5

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Meskendahl, S. (2010). The influence of business strategy on project portfolio management and its success. A conceptual framework. *International Journal of Project Management, 28*(8), 807–817. https://doi.org/10.1016/j.ijproman.2010.06.007

Mikecz, R. (2012). Interviewing elites: Addressing methodological issues. *Qualitative Inquiry, 18*(6), 482-493. https://doi.org/10.1177/1077800412442818

Miracle V. A. (2016). The Belmont report: The triple crown of research ethics. *Dimensions of Critical Care Nursing: DCCN*, *35*(4), 223–228. https://doi.org/10.1097/DCC.0000000000000186

Miterev, M., Engwall, M., & Jerbrant, A. (2016). Exploring program management competencies for various program types. *International Journal of Project Management, 34*, 545-557. https://doi.org/10.1016/j.ijproman.2015.07.006

Molina-Azorin, J. F., Bergh, D. D., Corley, K. G., & Ketchen, D. J. (2017). Mixed methods in the organizational sciences. *Organizational Research Methods*, *20*(2), 179–192. https://doi.org/10.1177/1094428116687026

Montequín, V. R., Balsera, J. V., Fernández, S. M. C., & Fernández, F. O. (2018). Exploring project complexity through project failure factors: Analysis of cluster patterns using self-organizing maps. *Complexity*, *2018*, 1–17. https://doi.org/10.1155/2018/9496731

Morse, J. M. (2015). "Data were saturated…" *Qualitative Health Research, 25,* 587–588. https://doi.org/10.1177/1049732315576699

Müller, R., Pemsel, S., & Shao, J. (2016). Organizational enablers for project governance

and governmentality in project-based organizations. *International Journal of Project Management, 33*(4), 839-851. http://doi:10.1016/j.ijproman.2014.07.008

Musembi, A. K. K., Guyo, W., Kyalo, D. N. & Mbuthia, A. (2018). Effect of employees' soft skills on performance of public energy sector projects in Kenya. *International Academic Journal of Human Resource and Business Administration, 3*(2), 1-13. http://www.iajournals.org/articles/iajhrba_v3_i2_1_13.pdf

Muszyńska, K. (2018). Communication maturity model for organizations realizing EU projects. *Procedia Computer Science, 126,* 2184-2193. https://doi.org/10.1016/j.procs.2018.07.230

Nadae, J. D., & Carvalho, M. M. (2019). Communication management and knowledge management in Complex projects: A literature review. *Revista De Gestão e Projetos*, *10*(1), 19–36. https://doi.org/10.5585/gep.v10i1.10910

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). The Belmont report: Ethical principles and guidelines for the protection of human subjects of research. U.S. Department of Health and Human Services.

National Development Strategy. (1996). Chapter 41: The public sector investment programme: A summary. http://www.guyana.org/NDS/NDS.htm

Nebeker, D. M. (1975). Situational favorability and PERCEIVED environmental uncertainty: An integrative approach. *Administrative Science Quarterly*, *20*(2), 281. https://doi.org/10.2307/2391700

Neubauer, B. E., Witkop, C. T., & Varpio, L. (2019). How phenomenology can help us

learn from the experiences of others. *Perspectives on Medical Education*, *8*(2), 90–97. https://doi.org/10.1007/s40037-019-0509-2

News Room (2021). Government to follow through on plans to resuscitate LCDS. https://newsroom.gy/2021/02/12/govt-to-follow-through-on-plans-to-resuscitate-lcds/

Ng, J. J. (2018). Tailoring a project management methodology that suits one's needs. *IEEE Engineering Management Review*, *46*(2), 49–54. https://doi.org/10.1109/emr.2018.2839670

Nguyen, C. T., & Phong, P. N. (2017). The Linkage between public, private investment and economic growth- Evidence for the developing ASEAN and Asian Countries. *Journal of Economics and Public Finance, 3*(4), 580. http://doi:10.22158/jepf.v3n4p580

Northouse, P. G. (2019). *Leadership: Theory and practice*. SAGE Publications, Inc.

O'Brochta, M. (2018). How to get executives to act for project success. *PM World Journal.* 8(2). www.pmworldjournal.net

OECD. (2017b). Systems approaches to public sector challenges: Working with change. *OECD Publishing*. https://doi.org/10.1787/9789264279865-en

Ofori-Kuragu, J. K., Baiden, B., & Badu, E. (2016). Critical success factors for Ghanaian contractors. *Benchmarking, 23*(4), 843–865. https://doi.org/10.1108/BIJ-03-2014-0018

O'Neill-Carrillo, E., Mercado, E., Luhring, O., & Jordan, I. (2018). Local socio-economic development Through COMMUNITY-BASED distributed energy resources.

2018 IEEE International Symposium on Technology and Society (ISTAS). https://doi.org/10.1109/istas.2018.8638285

Ong, S., Uddin, M. (2020). Co-evolution of project stakeholder networks. *Journal of Modern Project Management, 8*(1), 96-115. https://doi.org/10.19255/JMPM02306

Oputa, N, B. (2017). *Project managers' strategies for megaproject success* [Doctoral study, Walden University]. 400. https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=5949&context=dissertations

Otundo Richard, M., & Langat, G. (2019). Result based management and performance of projects in public sector. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3449497

Pace, M. (2019). A correlational study on project management methodology and project success. *Journal of Engineering, Project, and Production Management, 9*(2), 56-65. https://doi.org/10.2478/jeppm-2019-007

Park, J. & Park, M. (2016). Qualitative versus qualitative research method: Discovery or justification? *Journal of Marketing Thought, 3*(1), 1-7. https://doi.org/10.15577/jmt.2016.03.01.1

Patanakul, P., Kwak, Y. H., Zwikael, O., & Liu, M. (2016). What impacts the performance of large-scale government projects? *International Journal of Project Management, 34*(3), 452–466. https://doi.org/10.1016/j.ijproman.2015.12.001

Patton, M. Q. (2015). *Qualitative evaluation and research methods* (4th ed.). SAGE

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

PMI. (2016). The higher cost of low performance. How will you improve? https://www.pmi.org//media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2016.pdf

Potter, E. M., Egbelakin, T., Phipps, R., & Balaei, B. (2018). Emotional intelligence and transformational leadership behaviours of construction project managers. *Journal of Financial Management of Property and Construction, 23*(1), 73-89. https://doi.org/10.1108/JFMPC-01-2017-0004

Presbitero, A. F. (2016). Too much and too fast? Public investment scaling-up and absorptive capacity. *Journal of Development Economics, 120*, 17-31. https://doi.org/10.1016/j.jdeveco.2015.12.005

Pretorius, S., Steyn, H., & Bond-Barnard, T. J. (2018). Leadership Styles in Projects: Current trends and future opportunities. *South African Journal of Industrial Engineering*, *29*(3). https://doi.org/10.7166/29-3-2057

PricewaterhouseCoopers. (2017). *PwC Switzerland: Are public projects doomed to fail*? https://www.pwc.ch/en/insights/public-sector/are-public-projects-doomed-to-fail.html

Prior, M. (2018). Accomplishing "rapport" in qualitative research interviews: Empathic moments in interaction. *Applied Linguistics Review, 9*(4), 487-511. https://doi.org/10.1515/applirev-2017-0029

Project Management Institute. (2017a). *A guide to the project management body of*

knowledge (PMBOK® guide; 6th ed.). Author

Project Management Institute. (2017b). *Success rates rise - Transforming the high cost of low performance.* https://www.pmi.org/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2017.pdf

Project Management Institute. (2018). Success in disruptive times – Expanding the value delivery landscape to address the high cost of low performance. https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thoughtleadership/pulse/pulse-of-the-profession-2018.pdf

Project Management Institute. (2019). Research highlights by industry and region. https://www.pmi.org//media/pmi/documents/public/pdf/learning/thoughtleadership/pulse/pulse-all-comparison-reports-final.pdf?v=1f786811-3b88-443f93c5fc79188e6100

Project Management Institute. (2020). *PMI's pulse of the profession: The high cost of low performance.* https://www.pmi.org//media/pmi/documents/public/pdf/learning/thoughtleadership/pulse/pulse-of-the-profession-2020.pdf

Pulse of the Profession. (2020). How the presence of a PMO and EPMO can increase project success rates. Online. https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-all-comparison-reports-final.pdf?v=dd7afb39-1fe0-4063-923f-11410463244d

Pyrczak, F., & Bruce, R. R. (2017). *Writing empirical research reports: A basic guide for students of the social and behavioral sciences* (8th ed.). Routledge.

Qazi, A., Dikmen, I., & Birgonul, M. (2020). Prioritization of interdependent uncertainties in projects. *International Journal of Managing Projects in Business, 13*(5), 913–935. https://doi.org/10.1108/IJMPB-10-2019-0253

Qazi, A., Quigley, J., Dickson, A., & Krytopoulos, K. (2016). Project complexity and risk management (ProCRiM): Towards modelling project complexity driven risk paths in construction projects. *International Journal of Project Management, 34*(7), 1183-1198. https://doi.org/10.1016/j.ijproman.2016.05.008

Queiros, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies, 3*, 369–386. https://doi.org/10.5281/zenodo.887089

Radujkovic, M. & Sjekavica, M. (2017). Development of a project management performance enhancement model by analyzing risks, changes, and limitations. *Gradjevinar, 69*, 105-120. https://doi.org/10.14256/JCE.1866.2016

Ramlee, N., Tammy, N. J., R. N. H. Raja Mohd Noor, Musir, A. A., Karim, N. A., Chan, H. B., & Nasir, S. R. (2016). Critical success factors for construction project. *AIP Conference Proceedings, 1774*(030011), 1-6. https://doi.org/10.1063/1.4965067

Rao, M. S. (2018), Soft skills: Toward a sanctimonious discipline, *On the Horizon*, *26*(3), 215-224. https://doi.org/10.1108/OTH-06-2017-0034

Reeves, M., Legrand, J., & Fuller, J. (2018). Your strategy process needs a strategy. *BCG Henderson Institute.* https://bcghendersoninstitute.com/your-strategy-process-

needs-a-strategy-d2936710e87e

Rivera, A., & Kashiwagi, D. (2016). Creating a new project management model through research. *Procedia Engineering*, *145*, 1370-1377. https://doi.org/10.1016/j.proeng.2016.04.202

Roth, W.-M., & von Unger, H. (2018). Current perspectives on research ethics in qualitative research. *Forum: Qualitative Social Research, 19*(3), 798–809. https://doi.org/10.17169/fqs-19.3.3155

Safaei, M. (2020). Sustainable survival pyramid model to balance four factors of cost, quality, risk and time limitation in project management under uncertainty. *Pakistan Journal of Statistics & Operation Research*, *16*(2), 287-294. https://doi.org/10.18187/pjsor.v16i2.3203

Samáková, J., Babčanová, D., Chovanová, H. H., Mesárošová, J., & Šujanová, J. (2018). Project communication management in industrial enterprises (Step by Step). *Digital Communication Management, 25*(41), 24-42. https://doi.org/10.5772/intechopen.75160

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

San, O., Heng, T., Selley, S., & Magsi, H. (2018). The relationship between contingent factors that influence the environmental management accounting and environmental performance among manufacturing companies in Klang Valley,

Malaysia. *International Journal of Economics and Management, 12(1)*, 205-232. http://www.ijem.upm.edu.my/

Sanchez, M. A. (2018). How internet of things is transforming project management. In Z. H. Gontar (Ed.), *Smart Grid Analytics for Sustainability and Urbanization* (pp. 73-102). IGI Global https://doi.org/10.4018/978-1-5225-3996-4.ch003

Sanjari, M., Bahramnezhad, F., Khoshnava, F. F., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine, 7*(14), 2-6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/

Santhosh, M., & Baral, R. (2015). A conceptual framework for exploring the impacts of corporate social responsibility on employee attitudes and behaviour. *Journal of Human Values, 21*(2), 127–136. https://doi.org/10.1177/0971685815594270

Saunders, F. C., Gale, A. W., & Sherry, A. H. (2016). Mapping the multi-faceted: Determinants of uncertainty in safety-critical projects. *International Journal of Project Management*, *34*(6), 1057–1070. https://doi.org/10.1016/j.ijproman.2016.02.003

Saunders, M. N. K., & Townsend, K. (2016). Reporting and justifying the number of interview participants in organization and workplace research. *British Journal of Management, 27*(4), 836-852. https://doi.org/10.1111/1467-8551.12182

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research methods for business students* (7th ed.). Pearson Education Limited.

Serra, M., Psarra, S., & O'Brien, J. (2018). Social and physical characterization of urban

contexts: Techniques and methods for quantification, classification and purposive sampling. *Urban Planning, 3*(1), 58-74. https://doi.org/10.17645/up.v3i.1269

Serrador, P., & Turner, R. (2015). The Relationship between Project Success and Project Efficiency. *Project Management Journal, 46*(1), 30-39. https://doi.org/10.1002/pmj.21468

Serrador, P., & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal*, *46*(1), 30–39. https://doi.org/10.1002/pmj.21468

Shako, D. (2016, October 10). The repeated failure of major infrastructure projects in Guyana. *Kaieteur Newspaper*. https://www.kaieteurnewsonline.com/2016/10/10/the-repeated-failure-of-major-infrastructure-projects-in-guyana/

Shenhar, A. (2015). What is strategic project leadership? *Open Economics and Management Journal*, *2*(Suppl 1: M5), 29–37. https://doi.org/10.2174/2352630001502010029

Sillah, B. M. S. (2018). Project-backed sukuk: Can it be a model for resource mobilization, risk sharing and capital market development in developing economies? *Journal of Islamic Banking & Finance, 35(1)*, 68-83. http://islamicbanking.asia

Sim, J., Saunders, B., Waterfield, J., & Kingstone, T. (2018). Can sample size in a qualitative research be determined a priori? *International Journal of Social Research Methodology, 21*(5), 619-634.

http://doi:10.1080/13645579.2018.1454643

Simon, C. M., Schartz, H. A., Rosenthal, G. E., Eisenstein, E. L., & Klein, D. W. (2018). Perspectives on electronic informed consent from patients underrepresented in research in the United States: A focus group study. *Journal of Empirical Research on Human Research Ethics, 13*(4), 338–348. https://doi.org/10.1177.1556264618773883

Simon, M. K., & Goes, J. (2018). *Dissertation and scholarly research: Recipes for success* (2018 ed.). Dissertation Success LLC.

Singh, S. (2015, January 7). Guyana has wasted $50B on failed projects [Letter to the editor]. *Kaieteur Newspaper*. https://www.kaieteurnewsonline.com/2015/01/07/guyana-has-wasted-50b-on-failed-projects/

Sommer, A. F., Hedegaard, C., Dukovska-Popovska, I., & Steger-Jensen, K. (2015). Improved product development performance through agile/stage-gate hybrids. *Research-Technology Management, 58*(1), 34–44. https://doi.org/10.5437/08956308X5801236

Starkey, P. (1992). The early development of numerical reasoning. *Cognition, 43*(2), 93-126. https://doi.org/10.1016/0010-0277(92)90034-f

Steele, L. M., Mulhearn, T. J., Medeiros, K. E., Watts, L. L., Connelly, S., & Mumford, M. D. (2016). How do we know what works? A review and critique of current practices in ethics training evaluation. *Accountability in Research, 23*(6), 319-350. https://doi.org/10.1080/08989621.2016.1186547

Teller, J., Kock, A., & Germunden, H. G. (2014). Risk management in project portfolios is more than managing project risks: A contingency perspective on risk management. *Project Management Journal, 45*(4), 67-80. https://doi.org/10.1002/pmj.21431

Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative Research in Psychology, 14*(1), 23–41. https://doi.org/10.1080/14780887.2016.1219435

Tian, J. (2020). What does a project manager need to know about soft skills? *Modern Economics & Management Forum*, *1*(1). https://doi.org/10.32629/memf.v1i1.121

Uchitpe, M., Uddin, S., & Lynn, C. (2016). Predicting the future of project management research. *Procedia - Social and Behavioral Sciences. 226.* 27-34. https://doi.org/10.1016/j.sbspro.2016.06.158

United Nations (2015). Addis Ababa Action Agenda - Third International Conference in support of the implementation of the sustainable development goals. https://sustainabledevelopment.un.org/content/documents/2051AAAA_Outcome.pdf

United Nations Conference on Trade and Development. (2018). *Trade and development report. Bridging gaps or widening divides: Infrastructure development and structural transformation.* https://unctad.org/system/files/official-document/tdr2018ch4_en.pdf

Usman, M. (2018). Project management competence and complexity in projects: Impact study of the performance of mega engineering projects in Pakistan.

http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-149806

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), 100–110. https://doi.org/10.5430/jnep.v6n5p100

Van den Berg, A., & Struwig, M. (2017). Guidelines for researchers using an adapted consensual qualitative research approach in management research. *Electronic Journal of Business Research Methods, 15*, 109–119. http://www.ejbrm.com/main.html

Van Note Chism, N., & Weerakoon, S. (2012). APA, meet Google: Graduate students' approaches to learning citation style. *Journal of the Scholarship of Teaching and Learning, 12*(2), 27-38. http://files.eric.ed.gov/fulltext/EJ978905.pdf

VanWynsberghe, R., & Khan, S. (2007). Redefining case study. *International Journal of Qualitative Methods, 6*(2), 80-94. https://doi.org/10.1177/160940690700600208

Volden, G. (2019). Public funding, perverse incentives, and counterproductive outcomes. *International Journal of Managing Projects in Business, 12*, 466-486. https://doi.org/10.1108/IJMPB-12-2017-0164

Volden, G. H., & Samset, K. (2017). Governance of major public investment projects: Principles and practices in six countries. *Project Management Journal, 48*(3), 90–108. https://doi.org/10.1177/875697281704800306

Volden, G., & Andersen, B. (2018). The hierarchy of public project governance frameworks: An empirical study of principles and practices in Norwegian ministries and agencies. *International Journal of Managing Projects in Business,*

11(1), 174-197. https://doi.org/10.1108/IJMPB-04-2017-0040

Waheed, Z. (2016). Understanding project management: Skills and insights for successful project delivery. *Facilities, 34*, 493–494. https://doi.org/10.1108/F-09-2015-0068

Walden University. (2019). *DBA doctoral study rubric and research handbook.* http://academicguides.waldenu.edu/researchcenter/osra/dba

Wali, K. S., & Othman, S. A. (2019). Comparison and assessment of using Primavera and Microsoft project in construction projects in Erbil City. *ZANCO Journal of Pure and Applied Sciences, 31*(s3), 285-291. https://doi.org/10.21271/ZJPAS.31.s3.39

Walshe, C., Algorta, G. P., Dodd, S., Hill, M., Ockenden, N., Payne, S., & Preston, N. (2016). Protocol for the end-of-life social action study (ELSA): A randomised wait-list controlled trial and embedded qualitative case study evaluation assessing the causal impact of social action befriending services on end of life experience. *BMC Palliative Care, 15*(1), 60-75. https://doi.org/10.1186/s12904-016-0170-z

Wang, J-J., Sasanipoor, N., & Wang, M-M. (2018). How PMBOK standard and partnership quality influence IT outsourcing success: An investigation of the mediated moderation effects. *Journal of Global Information Technology Management*, *21*(4), 282–300. https://doi.org/10.1080/1097198X.2018.1536597

Wills, T. A. (1986). Discussion remarks on social comparison theory. *Personality and Social Psychology Bulletin*, *12*(3), 282–288. https://doi.org/10.1177/014616728612300

Woodward, J. (1958). *Management and technology (problems of progress in industry)* (Vol. 3). London: Her Majesty's Stationary Office.

World Bank. (2017). *World Bank annual report 2017 (English)*. World Bank Group. http://documents.worldbank.org/curated/en/143021506909711004/World-Bank-Annual-Report-2017

World Bank. (2018). *The World Bank annual report 2018 (English)*. World Bank Group. http://documents.worldbank.org/curated/en/630671538158537244/The-World-Bank-Annual-Report-2018

Wu, C., Chen, D., & Huang, S. (2018). Complexity of construction mega infrastructure project. *Complexity*, *2018*, 1–1. https://doi.org/10.1155/2018/7382083

Wysocki, R. K. (2019). *Effective project management: Traditional agile, extreme* (8th ed.). John Wiley & Sons.

Yahya, F. B. (2012). Divesting state-owned enterprises. *International Review of Business Research Papers*, *8*(4), 195-206. http://www.irbrp.com

Yap, J. B., & Skitmore, M. (2020). Ameliorating time and cost control with project learning and communication management. *International Journal of Managing Projects in Business, 13*(4), 767-792. http://doi:10.1108/ijmpb-02-2019-0034

Yin, R. K. (2011). *Qualitative research from start to finish*. The Guilford Press.

Yin, R. K. (2018). *Case study research: Design and methods* (6th ed.). SAGE Publications, Inc.

Yun, S., Choi, J., de Oliveira, D. P., & Mulva, S. P. (2016). Development of performance metrics for phase-based capital project benchmarking. *International Journal of Project Management, 34(3)*, 389–392. https://doi.org/10.1016/j.ijproman.2015.12.004

Zolfaghari, S., Aliahmadi, A., & Mahdavi Mazdeh, M. (2017). From strategy to project effectiveness: Introducing the three stages of strategic project management. *International Journal Business Excellence*, *12*(3), 308–328. https://doi.org/10.1504/IJBEX.2017.084441

Zuofa, T., & Ochieng, E. G. (2017). Working separately but together: Appraising virtual project team challenges. *Team Performance Management, 23*, 227-242. https://doi.org/:10.1108/TPM-06-2016-0030

Zyphur, J. M., & Pierides, C. D. (2017). Is quantitative research ethical? Tools for ethically practicing, evaluating and using quantitative research. *Journal of Business Ethics, 143*(0167-4544), 1-16. https://doi.org/10.1007/s10551-017-3549-8

Appendix A: Interview Protocol

What was done	**What was scripted**
Introduce the interview and set the stage - a quiet setting away from any office.	Hello! Good day; my name is Rosco Greene, and I am a doctoral student at Walden University. I want to understand your successes in managing public projects. Thanks for your time in sitting down for this interview. There are no right or wrong answers; therefore, feel comfortable and free to say what you think in answering the questions. If okay, I would like to record our conversation, given the tedious nature of write down everything while at the same time having an attentive conversation. Again, whatever you say remains confidential; only my instructor and I will be aware of the answers. The recording will also form a purpose for recollection and clarification of follow-up questions if needed after this sit-down interview.
I will start with the basics. Background data about oneself and the industry	1. Opening question What has drawn you to the public sector, and how long you have been in project management.
	2. Interview question 3. What techniques do you use to manage relationship dynamics, engagement, and project stakeholders' support?

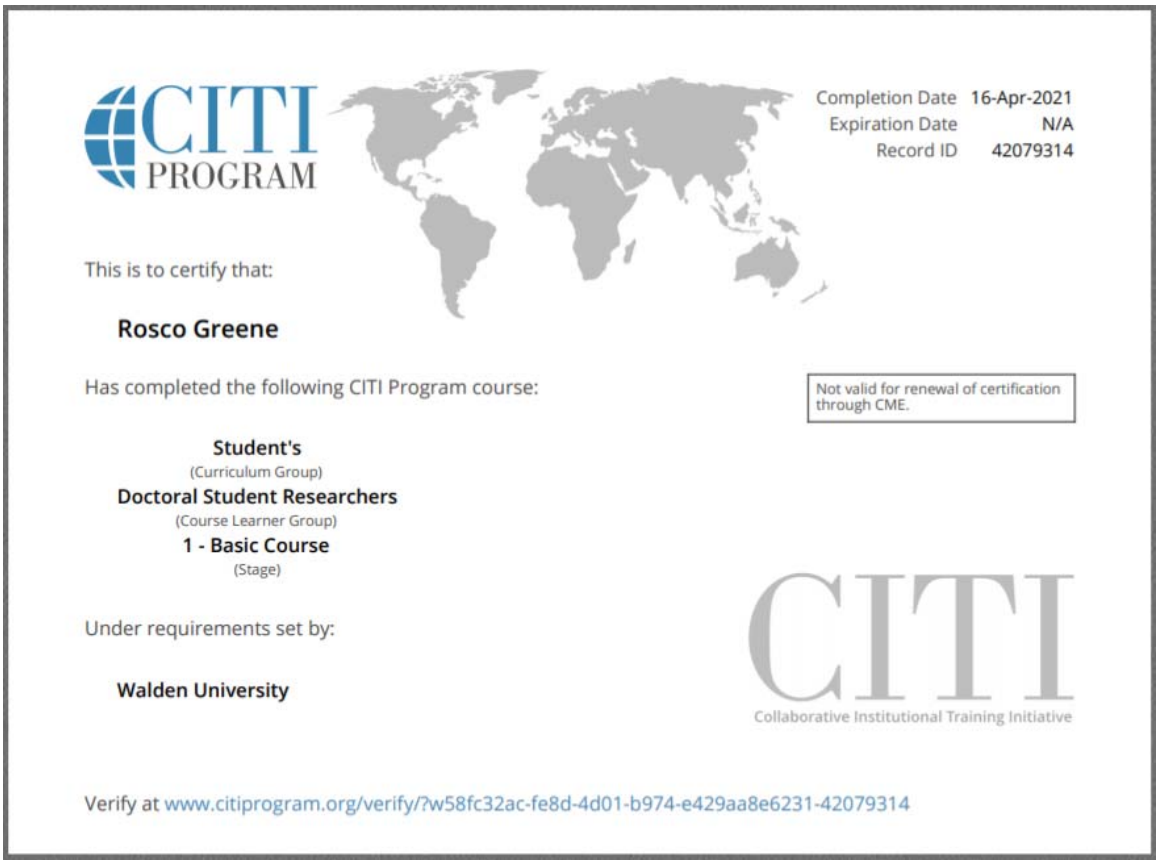
• Watch for nonverbal cues • Ask follow-up probing questions to get more in-depth data. • Qualitative researchers need deep and rich data • Again, probe, probe, probe. Metaphorically dig	4. Initial probe question What techniques and tools do you use to handle project attributes such as project scope, timelines, budgets, risk, quality, and complexity?
	5. Interview question What techniques and tools do you use to handle project attributes such as project scope, timelines, budgets, risk, quality, and complexity?
	6. Interview question (digging deeper) What are the critical challenges associated with aligning infrastructure projects with business management techniques and tools, and how have the challenges been addressed?
	7. *Probing* Interview question What techniques do you use that allows for support and resources from the ministry to ensure project success?
	8. Follow-up Interview question How and when do you leverage or mitigate organizational characteristics, such as governance, structure, systems, incentives, and socio/cultural factors, to ensure project management success?

deep for rich data.	9. How is the concept of alignment communicated throughout the organization, and its effects on the project deliverables and milestones?
	10. How do you share your personal project experiences? 11. How are issues and constraints dealt with within the project management processes?
	12. Wrap-up interview question What other feedback can you provide that you think can be critical for project success?
Wrap up interview thanking participant	That was my final question. I want to thank you very much for participating in this exercise and for your candid assessment as an experienced practitioner in managing public projects.
Schedule follow-up member checking interview	I would consider this interview adequate, but I will email you concerning any such information if the need arises for any additional information. Thank you.

Appendix B: Open-Ended Interview Questions

1. What techniques do you use to manage relationship dynamics, engagement, and project stakeholders' support?
2. What techniques and tools do you use to handle project attributes such as project scope, timelines, budgets, risk, quality, and complexity?
3. What are the critical challenges associated with aligning infrastructure projects with business management techniques and tools, and how have the challenges been addressed?
4. What techniques do you use that allows for support and resources from the ministry to ensure project success?
5. How and when do you leverage or mitigate organizational characteristics, such as governance, structure, systems, incentives, and socio/cultural factors, to ensure project management success?
6. How is the concept of alignment communicated throughout the organization, and its effects on the project deliverables and milestones?
7. How do you share your personal project experiences?
8. How are issues and constraints dealt with within the project management processes?
9. What other feedback can you provide that you think can be critical for project success?

Appendix C: Collaborative Institutional Training Initiative Certification



CITI PROGRAM

Completion Date 16-Apr-2021
Expiration Date N/A
Record ID 42079314

This is to certify that:

Rosco Greene

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Student's
(Curriculum Group)
Doctoral Student Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Walden University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w58fc32ac-fe8d-4d01-b974-e429aa8e6231-42079314