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Project Management Strategies to Reduce Post-War Project Failure Rates in Liberia

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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MS, Ghana Institute of Management and Public Administration, 2009

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Project managers working in post-war Liberia from 2006 to 2020 have been struggling to reduce project failure rates due to ineffective project management strategies. This case study included the Delphi technique to explore strategies that project managers working in post-war Liberia's Ministry of Education may use to reduce project failure rates. The study addressed use of knowledge management principles in post-war project management. The resource-based view and knowledge-based view of organizations provided the conceptual framework. The purposeful international sample consisted of 20 project managers working with international organizations registered with Liberia's Ministry of Finance and Development Planning and affiliated with the Ministry of Education. Data were collected from a focus group discussion with four expert project managers on Skype and from email surveys with 16 expert project managers. Data analysis involved thematic classification of responses by the expert project managers. Participants recommended nine themes as strategies for reducing project failure rates within the post-war context: strengthen technical capacities of project teams; ensure financial compliance and accountability; ensure effective and efficient project implementation, monitoring, and evaluation; ensure effective donor-partner coordination; effective communication skills; knowledge-sharing skills; sector-specific technical knowledge; communicate project goals, objectives, and resources needed to accomplish objectives; and network and collaborate with project stakeholders to review project progress. Project managers may integrate recommended strategies into post-war project planning, implementation, monitoring, and evaluation to reduce project failure rates.

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Dedication

I dedicate my dissertation to people of the Republic of Liberia, the experts who participated in the study, and the project personnel who have committed themselves to make a difference within post-war environments.

Additionally, I dedicate this dissertation to everyone who is interested in contributing to positive social change in the lives of individuals and communities that have experienced difficult circumstances from the effects of war.

Acknowledgments

I thank God for strengthening me to complete my dissertation in the midst of all of the circumstances that surrounded me. I appreciate the patience and endurance of my wife, Josephine, and children, Ewurabena, Abeeku, and Kojo, during periods of my "unavailability" to them when they needed my attention.

I would like to thank my dissertation committee members: Dr. Carol Wells, who has "walked" with me since the first day I started this journey and has always encouraged me to move on; Dr. Alen Badal, whose priceless support always "activated" me with thought-provoking feedback; and Dr. Patricia N. Polastri, for her comments and encouragement.

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Chapter 1: Introduction to the Study

Project managers working in post-war Liberia from 2012 to 2020 have been struggling to reduce project failure rates due to ineffective project management (PM) strategies (Ministry of Finance and Development Planning [MFDP] Liberia, 2015; Ministry of Planning and Economic Affairs [MPEA] Liberia, 2012; National policy on non-governmental organizations in Liberia, 2008). Liberia's civil war occurred from 1989 to 2003. I used the qualitative Delphi case study method to explore what management strategies and knowledge management (KM) principles project managers working with Liberia's Ministry Education (MOE) can use to reduce project failure rates. A purposeful international sample comprising 20 education sector project managers working with Liberia's MOE provided data for the study. Four of the selected program managers who had the highest numbers of years of experience working within Liberia's post-war environment and the highest academic credentials were selected for focus group interviews and the remaining 16 as expert panel members. Studies revealed that integrating KM principles into PM strategies can improve PM effectiveness and reduce project failure (Gholami et al., 2013; Young et al., 2010). Project management effectiveness dynamics included organizational structure, technical capability, leadership quality, and project success (Jiang, 2014; Todorović et al., 2013). Knowledge management principles included knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization (Gholami et al., 2013; Young et al., 2010).

Liberia transitioned from post-war reconstruction status to medium-term growth and poverty reduction, and is currently implementing the Agenda for Transformation:

Steps toward Liberia Rising 2030 (MPEA Liberia, 2012). The process is in line with the country's long-term strategy to become a middle-income country by 2030 (Bertelsmann Stiftung, 2018; MPEA Liberia, 2012; United States Agency for International Development, 2013). Organizational leaders in post-war Liberia seek ways to reduce project failure rates to sustain contributions to the post-war rebuilding process (Liberia Institute of Statistics and Geo-Information Services [LISGIS], 2011; MPEA Liberia, 2012; Varpilah et al., 2011). Within the post-war context, implementing traditional PM strategies do not translate into intended results (Chauvet et al., 2010). The dearth of structures in Liberia's post-war environment limits information existence and availability for policymaking (MPEA Liberia, 2011; President E. Sirleaf, personal communication, May 4, 2011). The Government of Liberia has reechoed the need to improve management and coordination of development projects to achieve intended policy results (MPEA Liberia, 2012; National Millennium Compact Development Project, 2013; National policy on non-governmental organizations in Liberia, 2008; Sirleaf, 2014).

I conducted a qualitative inquiry using the Delphi technique to solicit information from a panel of experts concerning management strategies and KM principles that project managers can use to reduce post-war project failure. The anticipated positive social change includes increased awareness of project managers about management strategies and KM principles that project managers can use to influence post-war PM effectiveness. Project teams may use the study results to improve project implementation strategies and reduce project failure rates, thereby enhancing project contributions to Liberia's long-term nation rebuilding process. The major sections of this chapter include Introduction,

Background of the Study, Problem Statement, Purpose of the Study, Research Questions, Conceptual Framework, Nature of the Study, Operational Definitions, Assumptions, Scope and Delimitations, Limitations, Significance of the Study, Social Change, and Summary.

Background of the Study

The literature revealed studies on the relationships between organizational performance, project failure, project success, management strategies, principles of KM, and PM effectiveness. Tomomitsu et al. (2018) concurred with Terzieva (2014) that integrating KM principles into PM strategies could improve PM effectiveness and reduce project failure rates. I explored what management strategies and KM principles project managers can use to reduce project failure.

Todorovié et al. (2013), in their analysis of known measurement frameworks and models for project success, identified common problems faced by project-oriented organizations as alignment of their projects with the organizations' strategic directions, and choice of methods to assess how project results contributed to the organizations' goals. Todorovié et al. recommended that project success should be comprehensively evaluated using integrated performance indices that linked the organizations' performance indicators to success measures of the projects. The contention of Jiang (2014) that a project manager's leadership style has a direct influence on project success aligned with recommendations made by Todorovié et al.. Jiang surmised that the leadership style of a project manager influences the project performance through procedures such as the promotion of teamwork, information management, and

communication with project staff and clients. Todorović et al. added that evaluations of integrated performance indices should include the organization's procedures, technology, and resources and external influences such as competition, clientele, business associates, regulations, and socioeconomic impacts. Evaluating the organization's procedures and resources supports Jiang's assertion that project types require particular leadership styles to ensure project success.

The literature suggested that effective use of knowledge to improve organizational performance creates and maintains competitive advantage (Gholami et al., 2013). According to Kukko (2013), internal and external knowledge can be shared within an organization to gain competitive advantage by actively engaging the staff to develop a knowledge-sharing culture. In concurrence, Gholami et al. (2013), OuYang (2015), and Young et al. (2010) demonstrated that organizational leaders could improve organizational performance through knowledge creation, knowledge acquisition, knowledge storage, knowledge application, and knowledge sharing. Apart from attaining competitive advantage, Nafei (2014) suggested that promotion of organizational learning through KM ensures sustainable success in organizational performance. To implement KM successfully within an organization, Bhatti et al. (2011) proposed a conceptual framework model that integrated intellectual capital, knowledge processes, organizational structure, and strategy. Other significant factors that enhance organizational performance include staff performance, customer gratification, work interactions, innovation, fiscal performance, and productivity (Gholami et al., 2013).

Determinants of KM effectiveness within organizations identified by Theriou et al. (2011) were: leadership, strategy, culture, people, and technology as key enablers. Although Young et al. (2010) listed knowledge worker competency plan, knowledge mapping, KM maturity model, mentor/mentee scheme, knowledge portal, and video sharing as six highly recommended KM tools, Theriou et al. posited that technology, strategy, and people were not significantly related to KM effectiveness. The apparently contrasting views of Young et al. and Theriou et al. suggested that highly recommended KM tools may not necessarily be critical factors that determine KM effectiveness within an organization.

The performance of an organization is an important contributing factor to its sustained competitive advantage. Workplace environment and organizational structure can influence how employees perform their tasks and affect their organization's performance. Chandrasekar (2011) analyzed the influence of workplace environment on public sector employees' performance and concluded that a nonhazardous office space with adequate furnishings and storage facilities will enhance employee performance. In addition, Chandrasekar posited that engagement of employees in mutual goal setting, clarification of role expectations, and provision of regular performance feedback by managers and supervisors will enhance employee performance. Gholami et al. (2013) agreed with Chandrasekar that human-to-human interactions to provide mutual support and encouragement will motivate employees to strive toward achieving corporate goals. Madu's (2011) study results were consistent with Bhatti et al. (2011) and Theriou et al. that organizational culture sustains performance and promotes competitive advantage.

Madu cautioned that unethical organizational culture and cultures that are insensitive or indifferent to ethical considerations could have adverse effects on an organization's performance. My study was in line with the positions established in the literature about management strategies, KM principles, and PM effectiveness measures.

I selected education sector project managers who had worked in post-war Liberia from 2012 to 2020 because they were key actors in achieving success of projects implemented by their organizations. In addition, I assumed they would provide practical knowledge for answers to questions related to reduction of post-war project failure rates. My study was used to provide information about perceptions of Liberia's post-war project managers regarding management strategies and KM principles that project managers may use to reduce project failure. The results may assist managers of projects within the post-war context to plan, implement, monitor, and evaluate their project strategies to reduce project failure. A detailed review of the literature is provided in Chapter 2.

Problem Statement

The general problem was high post-war project failure rates in Liberia. The specific problem was ineffective PM strategies implemented by project managers working with post-war Liberia's MOE that resulted in project failure rates not decreasing as expected from 2006 to 2020 (MOE, 2015; MFDP Liberia, 2015; MPEA Liberia, 2012). Liberia's civil war occurred from 1989 to 2003. Previous studies did not address the use of management strategies and KM principles to improve post-war PM effectiveness. Within complex environments such as post-war Liberia, project failure

rates are high despite possession and use of requisite tools and methodologies by project teams (Chauvet et al., 2010). According to Shetach (2010), achievement of project success depends on effectiveness with which project teams manage their projects. Integration of KM principles into PM strategies can improve PM effectiveness and reduce project failure rates (See Terzieva, 2014; Tomomitsu et al., 2018). My study findings were intended to contribute to existing literature and strategies that may improve PM effectiveness within post-war contexts to reduce project failure rates. Results may guide post-war project managers regarding management strategies and KM principles to employ for project implementation. The positive social change implications include project managers integrating the recommended strategies into post-war project planning, implementation, monitoring, and evaluation to reduce project failure rates.

Purpose of the Study

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. Using the Delphi technique, I solicited opinions of 20 expert project managers who had worked in the education sector of post-war Liberia from 2012 to 2020. Huang et al. (2013) posited that within management theory, KM is an important theme because managers use KM procedures to manage intellectual property. Knowledge management principles include knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization (Gholami et al., 2013; Young et al., 2010). Project management effectiveness dynamics include organizational structure, technical capability, leadership quality, and project success (Jiang, 2014; Todorović et al., 2013).

The Delphi technique involves expert panel members anonymous to each other building consensus on issues that have limited knowledge support or that have insufficient literature to support their use for decision-making (Dalkey, 1969; Kleynen et al., 2014; Meshkat et al., 2014). Details of the current study's methodology are included in Chapter 3.

Research Questions

The research questions for this study were the following:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management resources that may be suitable for reducing project failure rates?

Conceptual Framework

I derived the conceptual framework for this study from the resource-based view (RBV) of organizations (Penrose, 1959, as cited in Truijens, 2003; Wernerfelt, 1984), and the knowledge-based view (KBV) of organizations (Mbhalati, 2012; Nickerson & Zenger, 2004). Theories of organizations propounded by researchers consist of concepts and models that clarify and predict structures and behaviors of business enterprises. Penrose (1959, as cited in Truijens, 2003) emphasized that tapping the experiences and capabilities of an organization's staff would result in delivering productive services by the management team. Capabilities available within an organization could determine effective management of knowledge resources within the organization (J. J. Ferreira et al., 2011).

An organization's resources could be tangible such as location, capital, and equipment, or intangible such as entrepreneurial orientation, reputation, knowledge, and skills (Wernerfelt, 1984). According to Van Reijsen et al. (2014), formal adoption of KM policies by an organization produces more impact on the organization's dynamic capability than can be achieved with social capital. Principal factors of an organization's sustained competitive advantage resulting in continuous superior business performance are its diverse knowledge resources and capabilities (Afzal & Afzal, 2014). I conducted my study to explore how, within Liberia's post-war context, managing knowledge-based

resources and strategies such as knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization could reduce project failure.

Popper (1959/2002) argued that the words *objective* and *subjective* had philosophical positions influenced by inconclusive and interminable contradiction of discussions, and that scientific theories could not be fully justified or verified. Wuisman (2005) posited that social scientific research practice could no longer be operational only within rationalization of knowledge claims. Rather, social scientific research could be an essential component of the more expansive and encompassing framework of the scientific discovery cycle (See Zachariadis et al., 2013). In the current study, I recognized that objectivity of scientific statements rests on the principle that they can be tested intersubjectively.

Four paradigms that underlie the models used for research are the positivist/postpositivist, social constructivist, pragmatist, and advocacy/participatory (Aliyu et al., 2014; Shanon-Baker, 2016). The positivist/postpositivist paradigm accepts that it is not possible to find absolute truth, and that research evidence is fallible or imperfect (Aliyu et al., 2014). With this principle, researchers' work is an attempt to look for and describe associations as well as cause-and-effect relationships. The social constructivist paradigm has the belief that there are multiple realities (See Anney, 2014). According to social constructivism, researchers' work is trying to understand the way people experience and make sense of the world.

The pragmatist paradigm bases its position on the compatibility theory and acknowledges the different philosophical assumptions by stating that there are strengths

and weaknesses for every approach and that no approach is right or wrong, emphasizing that in the same study methods typically used by every approach could be mixed (Shanon-Baker, 2016). The advocacy/participatory paradigm involves marginalized or vulnerable groups in which researchers adopt a less neutral position than that which is usually required in scientific research. The approach may require informal interaction by the researchers with the research participants, and may involve living among the participants (Aliyu et al., 2014). The four paradigms guide researchers in selecting and using deductive and inductive approaches to research, and in constructing and testing theories (Shanon-Baker, 2016).

My study of aligning management strategies and KM principles with PM effectiveness was guided by the RBV, KBV, and the four paradigms that underlie models used for research. I explored the prospect of applying the RBV and KBV to the relationship between management strategies, KM principles, and reduction in post-war project failure rates. The linkages drawn formed the basis to identify ways to manage projects more effectively to reduce project failure in the post-war context. Chapter 2 includes a detailed analysis of literature that addressed the conceptual framework.

Nature of the Study

I conducted a qualitative case study using the Delphi technique. The Delphi technique involves using opinions of expert panel members who are anonymous to each other to build consensus on issues that have limited knowledge support or that have insufficient literature to support their use for decision-making (Dalkey, 1969; Meshkat et al., 2014). Qualitative inquiry focuses on maximizing the information use from small

samples and single cases selected based on information the small samples can provide (Erlingsson & Brysiewicz, 2013; Yin, 2003). The Delphi technique and the case study approach were consistent with the purpose of this study.

I used the predictive opinions of expert project managers to determine consensus about management strategies and KM principles that project managers can use to reduce post-war project failure rates in Liberia. The literature review suggested that there was not a uniform procedure for determining consensus using the Delphi technique (Bzowyckyj & Janke, 2013; Kleynen et al., 2014). However, a high percentage of agreement among responses from expert panel members, frequency distributions, standard deviation, and interquartile range were mentioned (See Giannarou & Zervas, 2014; Von der Gracht, 2012). Whereas Kleynen et al. reached a third-round consensus with at least 70% of a 49-member Delphi panel agreeing on a topic, Maddock et al. (2017) determined a second-round consensus to be at least 80% agreement on a given item as important or extremely important by a 48-member Delphi panel. Kocherla (2012) attained third-round consensus using a 5-point Likert-type scale with mean 3.5, median of 4, and at least 66% agreement of responses from 18 expert project managers surveyed. Using a 5-point Likert-type scale, Bzowyckyj and Janke (2013) conducted a modified Delphi survey involving nine participants and reached a predefined consensus agreement of 75% during the third-round. For my study, the consensus criteria were a mode of at least 4, a median of at least 4, and at least three quarters of participants rating 4 or 5 for each theme on a 5-point Likert-type scale.

Participants in my study were 20 expert education sector project managers working with Liberia's MOE. The project managers' organizations implemented projects with the government of Liberia in achieving Liberia's post-war national development goals such as poverty reduction, national capacity development, county development, education sector reforms, community development, and millennium development goals (See MPEA, 2012). Sectors in which the projects operated within Liberia included health, education, agriculture, commerce, governance, and public works using donor funds from organizations such as the World Bank, International Monetary Fund, United Nations agencies, United States Agency for International Development, European Union, and the Swedish International Development Agency (See National policy on non-governmental organizations in Liberia, 2008). Four of the selected participants who had the highest numbers of years of experience working within Liberia's post-war environment and the highest academic credentials were selected for focus group interviews and the remaining 16 as expert panel members. I used the data to clarify the influences that management strategies and KM principles could have on reducing post-war project failure.

Using the Delphi technique, I conducted focus group interviews via Skype, and emailed self-administered questionnaires to the expert panel to solicit their perceptions and consensus about what management strategies and KM principles are likely to reduce post-war project failure. The participants included 20 education sector project managers working with Liberia's MOE. According to B. Marshall et al. (2013), a single case study normally includes 15 to 30 interviews. Even though researchers had recommended a relatively small sample for a Delphi panel (Balasubramanian & Agarwal, 2012; Linstone

& Turoff, 2002), my rationale for selecting 20 project managers working with the MOE was to accommodate possible nonresponse and participant dropouts from the study. The selection of a relatively large sample was based on previous Delphi studies in which similar sample sizes were used to achieve the study goals.

The panelists for my study participated in three rounds and consensus-building sessions via the internet. I used open-ended questions to obtain responses from participants during the Delphi first-round survey. Key steps to conduct a qualitative study using Delphi technique with a Likert-type scale indicated by Dalkey (1969), Yarmohammadiyan et al. (2015), and Balasubramanian and Agarwal are outlined as follows:

- Step 1: For the first-round Delphi survey, expert panel members anonymously respond to open-ended questions focused on the issue under investigation. In addition, each expert panel member is given a chance to suggest alternative responses to be included in the study.
- Step 2: The researcher reviews open-ended survey responses obtained from Round 1 and categorizes according to themes and patterns identified. The categories are used to create a list of structured Likert-type closed-ended questionnaire items for the second-round Delphi survey.
- Step 3: The expert panel is presented with a Likert-type closed-ended questionnaire for a second-round Delphi survey to provide ratings on the categories of Likert-type scales created. The expert panel is given an opportunity to recommend changes to the survey questions and suggest

applicable new questions. Additionally, the Round 2 Delphi survey involves presenting each expert panelist with an anonymous aggregated summary of responses obtained from Round 1. The aggregation is presented in forms such as summary data and graphical representations. Expert panel members are invited to confirm their responses for Round 1 based on the summary of collective responses obtained from Round 1.

- Step 4: The researcher analyzes survey responses from Round 2 and provides a report about the experts' agreement and consensus, or otherwise, based on predetermined consensus criteria. The report should include a summary of ratings provided by expert panelists on the Likert-type scale questions, and should be displayed using qualitative descriptive measures of central tendency, namely mode and median. If agreement or consensus is not realized among the expert panelists according to the predetermined consensus criteria, a third-round Delphi survey is conducted.
- Step 5: For Round 3, the expert panelists are presented with a revised Likert-type closed-ended questionnaire accompanied by a summary of Round 2 responses for confirmation or re-rating of their responses. If consensus is not reached, subsequent rounds of Delphi survey are conducted until consensus or data saturation is reached. According to Fusch and Ness (2015), data saturation occurs when enough information is obtained to replicate a study and the ability to obtain additional new information is reached with no further

coding feasible. The Delphi survey is terminated and conclusions are drawn based on the results obtained through consensus or data saturation.

The approach, as applied to my study, provided an opportunity to identify themes and patterns from qualitative responses obtained. The themes and patterns were sent back to the participants to indicate their concurrence, or otherwise, on a 5-point nominal Likert-type scale for desirability and feasibility during the second-round, and for importance and confidence during the third-round. Responses from the second and third-rounds were analyzed using qualitative descriptive measures of central tendency, namely mode and median (See Green & Salkind, 2011; Subedi, 2016; Toma & Picioreanu, 2016). Results generated from preceding consensus-building sessions became inputs to questionnaire development for the subsequent sessions (See Yousuf, 2007).

Definitions

The definitions of terms pertaining to this study are as follows:

Delphi: A research method that involves repetitively administering a series of questionnaires to collect and filter views of selected experts anonymous to each other (Linstone & Turoff, 2002).

Knowledge: "Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. Within organizations knowledge often becomes embedded not only in documents or repositories, but in organizational routines, processes, practices, and norms" (Davenport & Prusak, 2000, p. 5).

Knowledge acquisition: The process of obtaining and learning an organization's applicable knowledge from multiple sources including targeted experts, documented experiences, and other relevant records (Gholami et al., 2013).

Knowledge creation: The process of developing knowledge resources by an organization through its functional boundaries (Gholami et al., 2013).

Knowledge management: Practices and processes related to creation, capture, sharing, and application of knowledge, competences, and aptitudes (Spangler et al., 2015).

Knowledge management principles: Knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization (OuYang, 2015; Young et al., 2010).

Knowledge storage: Storing knowledge for retrieval within an organization through multiple storage media such as the human mind, computer applications, and documentation (Gonzalez & Martins, 2017).

Knowledge utilization: The way an organization applies shared knowledge resources across its functional boundaries and provides the framework for securing the returns to be realized from its knowledge resources (Mahmoudsalehi et al., 2012).

Project: A unique temporary endeavor embarked on by a business entity to achieve predetermined objectives that can be classified as outputs, outcomes, or benefits (L. Larson & Drexler, 2010).

Project failure: A project is said to fail if it does not meet specified expectations and is not implemented on time and within an estimated budget (Ofori & Deffor, 2013).

Project management: The use of knowledge, skills, experience, modern techniques, and tools to execute project activities in the best interest of stakeholders (Project Management Institute, 2014b).

Project management effectiveness: An estimate of how project objectives are attained. It measures the extent to which a project can meet expected requirements (Ebbesen & Hope, 2013).

Assumptions

The first assumption made for this study was that the participants would provide honest and unbiased responses to questions posed to them. In addition, I assumed the project manager experts would be knowledgeable and experienced in Liberia's post-war PM from 2012 to 2020. I also assumed data collected would be an accurate representation of the participants' perceptions and would reflect their working knowledge. Next, I assumed the study would contribute to literature on reducing post-war project failure by applying management strategies and KM principles. In addition, I assumed that project managers who had worked within Liberia's post-war environment would have a wealth of experiences that would enable them to make valuable contributions to post-war PM deliberations. I assumed that the project managers, as senior staff within their organizations, would uphold the ethics of their offices and provide unbiased information to contribute to improving post-war PM to reduce project failure rates.

Scope and Delimitations

According to LISGIS (2011), a major limitation of the Government of Liberia and its development partners is weakness in compiling and disseminating data to measure and articulate impact of projects. The need to integrate measures to decrease project failure rates has become increasingly important to project practitioners (Bhatti et al., 2013; Rugenyi, 2015). I explored what management strategies and KM principles project managers can use to reduce project failure rates. The bounded case of the research was international organizations that were implementing projects in Liberia and were working with Liberia's MOE. The study comprised a purposeful international sample of 20 education sector project managers who had worked in post-war Liberia from 2012 to 2020. Results obtained reflected the views of sampled project managers and may not represent other organizations not working within Liberia's education sector. Further research would be required to generalize the results to project managers within post-war contexts.

Limitations

Circumstances that could adversely affect deductions and interpretations drawn from this study were varied. Participation in the study was voluntary and limited to education sector project managers from international organizations operating within Liberia and working with Liberia's MOE. Participants' responses were self-reported and may have reflected their perceptions rather than actual practices among organizations that worked with Liberia's MOE. The participants may have had the urge to describe their actions more favorably than the actions that may have occurred in reality.

The purpose of Delphi studies was to use consensus opinions to provide suitable forecasts about the future of a phenomenon (See Von der Gracht, 2012). Results of my study consisted of consensus reached by administering Delphi questionnaires via email to expert project managers. I used the results to make predictions about potential influences of management strategies and KM principles on post-war project failure. Predictions made do not guarantee any results. Researchers will have to test and confirm the conclusions drawn.

Significance of the Study

Significance to Practice

The study results may contribute to PM practice by providing managers of development projects in Liberia with information about how to improve post-war project planning, implementation, monitoring, and evaluation. The projects under focus were those implemented in Liberia and funded by donor agencies such as the World Bank, International Monetary Fund, United Nations agencies, United States Agency for International Development, European Union, Plan International, and the Swedish International Development Agency (See National policy on non-governmental organizations in Liberia, 2008). The long-term benefits may include reduced post-war project failure rates within the Liberian context.

Based on the influences of management strategies and KM principles identified to reduce project failure rates, project managers and their organizations operating within Liberia's post-war context may initiate a process to include the identified management strategies and KM principles in their project implementation strategies. In addition,

identifying which PM effectiveness dynamics were more responsive to the management strategies and KM principles may be important to the project managers and their organizations. The study results may equip organizational leaders with information to support their project managers to reduce project failure rates.

Significance to Theory

Project management effectiveness is a precondition for organizational productivity in terms of applicable management strategies and KM principles that can be used to reduce post-war project failure rates (See Little, 2011; Project Management Institute [PMI], 2013a). The selected expert project managers had an opportunity to express their opinions about what management strategies and KM principles project managers can use to reduce post-war project failure rates. The study results may help donor agencies working with the post-war project implementers to develop strategies to reduce project failure rates. Post-war project managers may be able to use information from this study to improve project performance by addressing issues related to accountability, high-performance expectations, and consistency in PM effectiveness.

Significance to Social Change

Within the context of Liberia's post-war social system, participation in socioeconomic and civic activities is often limited to the elite and literate communities. Organizations that are implementing projects within this context face the challenge of ownership by local populations and alignment of project activities to existing structures within the social system. The problem is due to weakness in information flow and knowledge-generating systems to link elite and literate communities with the local

populations. Results from this study may provide awareness to organizational leaders and project managers about management strategies and KM principles to include in their project planning, implementation, monitoring, and evaluation approaches. The positive social change implications include the larger population's greater participation in socioeconomic and civic activities to reduce post-war project failure rates.

Summary and Transition

Chapter 1 was used to set the background for the growing need to reduce project failure rates within the complex environment of post-war Liberia. Introduction to the study, background of the study, problem statement, research questions, conceptual framework, operational definitions, assumptions, scope and delimitations, limitations, and the significance of the study were presented in Chapter 1. The gap in the literature about management strategies and KM principles that project managers can use to reduce project failure rates within the post-war context was acknowledged in this chapter. The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. The social change implications that could result from using management strategies and KM principles to improve project success rates were discussed in this chapter. The literature review in Chapter 2 provides analyses of conceptual foundations of the study. The review is used to demonstrate how researchers analyzed the RBV and KBV to form the basis of applying management strategies and KM principles to improve post-war PM effectiveness.

Chapter 2: Literature Review

Project managers working in Liberia's post 1989 to 2003 civil war context have been struggling to reduce project failure rates from 2006 to 2020 due to ineffective PM strategies (See MFDP Liberia, 2015; MPEA Liberia, 2012; National policy on non-governmental organizations in Liberia, 2008). Integration of management strategies into PM approaches can improve project effectiveness and reduce project failure (Terzieva, 2014; Tomomitsu et al., 2018). According to Huang et al. (2013), KM is an important theme within management theory because managers use KM procedures to manage intellectual property. Previous studies had not addressed the influence of management strategies and KM principles on post-war PM effectiveness in Liberia. The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. Knowledge management principles include knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization (Gholami et al., 2013; Young et al., 2010). Project management effectiveness dynamics include organizational structure, technical capability, leadership quality, and project success (Jiang, 2014; Todorović et al., 2013).

This chapter includes a review of literature about how researchers explored management strategies and KM principles as an impetus for reducing project failure rates. I focus the first section on origins and applications of RBV and KBV as conceptual foundations for using an organization's resources to establish competitive advantage and improve organizational performance. In the second section, I review contemporary literature on PM effectiveness dynamics focusing on organizational structure, technical

capability, leadership quality, and project success. I also address KM principles of knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization.

Gap in Literature

Project managers, research analysts, and scholars have investigated issues related to PM, project success, project failure, and KM. My review of the literature did not reveal contemporary case studies that showed what management strategies and KM principles project managers could use to reduce post-war project failure rates in Liberia. Development of PM models, classification of projects and their life cycles, resource requirements, project success factors, measurement models and tools, and models for information system successes were addressed in dissertations, research papers, and articles reviewed.

Information obtained from the literature review indicated that project planning, communication, and information management were PM strategies that project managers could use to reduce project failure rates (S. R. Khan et al., 2014). Leal-Rodríguez et al. (2013) identified external factors such as cultural barriers, differences in language, and the locations of stakeholders that project managers could address to reduce project failure rates. Researchers indicated that failure of projects was not new in the PM domain. Even though many studies focused on revealing contributions of effective PM and KM to project successes and failures, the literature did not reveal influences of management strategies and KM principles on post-war project failure rates in Liberia.

In a study about how a project manager's leadership style directly influenced project success, Jiang (2014) identified information management as one management strategy by which a project manager influenced project success. Jiang did not specify the components of information management a project manager could use to influence project success. Jiang included teamwork promotion and communicating with project stakeholders as other management strategies a project manager could use to increase project success. Jiang did not test his findings within contexts such as post-war Liberia to support the generalization that different types of projects required management strategies implemented with particular leadership styles to ensure project success.

Several studies addressed linkages between PM, organizational performance, and KM with weaknesses identified in some conclusions. Gholami et al. (2013) concluded that improving KM practices such as knowledge creation, knowledge acquisition, knowledge storage, knowledge application, and knowledge-sharing could improve organizational performance. The critical components of organizational performance presented by Gholami et al. included customer satisfaction, productivity, innovation, financial and staff performance, and work relationships. One limitation of Gholami et al.'s study was its restriction to small and medium enterprises in the private sector. Further research with public sector organizations operating within contexts such as post-war Liberia was needed to test Gholami et al.'s conclusions.

Moustaghfir (2012) focused on the link between knowledge dynamics, organizational capabilities, and sustainability of an organization's competitive advantage. The conceptual framework of Moustaghfir's study was the RBV of organizations, which

was the conceptual foundation for my study. Moustaghfir concluded that effective and efficient management of an organization's knowledge asset dynamics had impacts on organizations's performance and enhanced competitive advantage. Moustaghfir's conclusion was consistent with conclusions by Gholami et al. that improving KM could improve organizational performance and increase competitive advantage. The weakness of Moustaghfir's study was the need for further research to define modalities and procedures for firms to use knowledge asset dynamics to enhance value of their products and services for increased organizational performance.

Leal-Rodríguez et al. studied the effect of cultural barriers on the link between KM strategies and innovation, and concluded that cultural barriers controlled the acquisition and use of knowledge within an organization. Leal-Rodríguez et al. indicated existence of conflict among individuals, lack of motivation, and resistance to change as cultural barriers but did not investigate direct linkages of the cultural barriers with specific management strategies applied within an organization. Conclusions drawn from Leal-Rodríguez et al.'s study required testing within the post-war environment for their applicability.

Mahmoudsalehi et al. (2012) investigated the influence of organizational structure on KM in terms of knowledge creation, knowledge sharing, and knowledge utilization, and concluded that a positive relationship existed between organizational structure and KM. According to Mahmoudsalehi et al., enhancing components of KM depends on the components of organizational structure being more decentralized, more informal, more complicated, and more integrated. The weakness in this inquiry was that more research

was needed to explore causal relationships between the organizational components (strategy, size, environment, and technology) and KM. Conclusions drawn by Mahmoudsalehi et al. and Gholami et al. were consistent with Moustaghfir's findings that KM strategies were important to enhance organizational performance.

There was general consistency among the researchers that improved organizational performance was required for achieving competitive advantage and reducing project failure. The literature revealed a positive relationship between KM and organizational performance (Gholami et al., 2013; Moustaghfir, 2012) and between PM and organizational performance (S. R. Khan et al., 2014). Most studies lacked testing within contexts such as post-war Liberia and could pose contextual challenges if project managers attempted to implement their conclusions within the post-war environment. There is a gap in the literature about identifying management strategies and KM principles suitable for improving PM effectiveness to reduce project failure rates within the post-war context. Providing a link between management strategies, PM effectiveness dynamics, and KM principles can assist managers of projects implemented within the post-war environment in Liberia to take apposite actions to reduce project failure. Organizations implementing projects within Liberia's post-war context may increase their productivity through application of management strategies and KM principles that improve PM effectiveness.

For each research question, my study generated the following themes:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

1. Strengthen technical capacities of project teams.
2. Ensure financial compliance and accountability.
3. Ensure effective and efficient project implementation, monitoring, and evaluation.
4. Ensure effective donor-partner coordination.

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

5. Effective communication skills.
6. Knowledge-sharing skills.
7. Sector-specific technical knowledge.
8. Communicate project goals, objectives, and resources needed to accomplish objectives.
9. Network and collaborate with project stakeholders to review project progress.

These findings indicated why project failure rates were not decreasing as expected in post-war Liberia, and the role parent organizations could play in project implementation, thus addressing gap in literature. Since project managers relied on support from the MOE that may have also been resource-constrained the project

managers consequently made the best of the limited resources available to them. Findings from my study provided more insights about challenges faced by project managers in relation to support expected from the MOE and the project managers' parent organizations.

The gap in the literature reviewed was lack of post-war context-specific management strategies and KM principles to reduce project failure rates in Liberia. Existing literature recommended key PM competences for project managers and their teams to implement projects effectively within contexts other than post-war Liberia. The recommendations included organizational structure, technical capability, leadership quality, and project success (See Jiang, 2014; Todorović et al., 2013). Technical capability was consistent with the following findings from my study: strengthen technical capacities of project teams, and sector-specific knowledge for post-war project teams to effectively implement projects and reduce post-war project failure. The findings extend assertions of Jiang and Todorović et al. to include post-war context-specific PM strategies.

Leadership quality for effective project implementation (See Jiang, 2014; Todorović et al., 2013) was consistent with results from my study as follows: effective donor-partner coordination; communicate project goals, objectives, and resources needed to accomplish objectives; and network and collaborate with project stakeholders to review project progress. Within the post-war context, enhancing leadership quality could be feasible through practical application of the results from my study thereby extending recommendations in literature reviewed to include post-war context. S. R. Khan et al.

(2014) posited that project planning, communication, and information management were PM strategies that project managers could use to reduce project failure rates. Two strategies identified from my study on post-war PM were consistent with the position of S. R. Khan et al. on management strategies and KM principles that can be used to reduce project failure. They are: ensure effective and efficient project implementation, monitoring and evaluation; and effective communication skills. The two strategies therefore extend the assertion of S. R. Khan et al. to include the post-war context.

Knowledge management principles such as knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization were identified in the literature as relevant for effective PM within contexts other than post-war Liberia (See Gholami et al., 2013; Young et al., 2010). The principles were consistent with results from my study namely effective communication skills, knowledge-sharing skills, and sector-specific knowledge. The findings extend the positions of Gholami et al. and Young et al. to include the post-war context on relevant KM principles for effective project implementation to reduce post-war project failure rates.

Moreover, different themes from my study than those obtained from the literature review included: ensure donor-partner coordination, and ensure financial compliance and accountability. This does not suggest that project managers implementing projects within the post-war context in Liberia do not need other PM and KM competences to reduce project failure. Rather, the barriers related to culture and contextual circumstances within Liberia's post-war environment could make it more practicable for specific PM and KM competences to be preferred by the project managers. The information obtained was

useful for closing the primary gap in literature which was lack of effective PM strategies to reduce post-war project failure.

In terms of PM resources needed to reduce post-war project failure rates, findings indicated that the most desired by the project managers were the following: qualified and competent staff, and adequate funding. The insufficiency of these resources constrained project managers to depend on less than adequate funding, and less competent staff to implement project activities, thereby compromising the quality of project deliverables achieved. Information about the resources needed by project teams contributed to closing the gap in literature by providing ways to improve the quality of resources for effective post-war project implementation. The top four KM resources indicated by the project managers as required to reduce post-war project failure rates included: a capacity development system, data management system, adequate logistics, and a periodic review system. The findings were consistent with information obtained from my review of the literature about KM principles needed for effective PM, and confirmed the viability of including KM principles in post-war PM strategies to reduce project failure.

Information obtained from the project managers about how the required competences and resources could be used to reduce post-war project failure rates specified strengthening technical capacities of project teams, strengthening organizational structures; improving project planning, implementation, monitoring, and evaluation; and adequate allocation of funds as the key uses. I observed that findings for all the questions did not exactly conform to information gathered from the literature review. The differences could be attributed to differences in contexts within which the research

information was obtained thereby confirming the gap about insufficient information regarding PM strategies that could be used to reduce post-war project failure. Findings from my study therefore provided more insight into management strategies and KM principles that project managers can use to reduce post-war project failure rates. The insights can be used as contributions to bridge the gap in literature particularly as KM principles become increasingly integrated into PM strategies within the post-war context.

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. Huang et al. (2013) posited that within management theory, KM was an important theme because managers used KM procedures to manage intellectual property. I envisage that my study results would contribute to PM practice by providing managers of development projects with information about how to improve post-war project planning, implementation, monitoring, and evaluation. Precisely, results from this study could be used to address significant gaps in literature about reducing post-war project failure rates with specific management strategies and KM principles. In addition, the results will contribute to knowledge within the domain of post-war PM effectiveness. Awareness of the competency and resource challenges faced by project managers implementing projects within the post-war context can engender a better comprehension about providing requisite organizational support needed by post-war project teams to reduce project failure.

Literature Search Strategy

Library databases and search engines used to locate requisite literature included the Walden University Library, Emerald, Google Scholar, Science Direct, ProQuest, SocINDEX, EBSCOhost, Sage Premier, Thoreau, and ABI/INFORM Complete databases; books, digital dissertations, and reliable websites. The keywords and phrases used for the search were *knowledge*, *project*, *management*, *effectiveness*, *knowledge management*, *knowledge management concepts*, *knowledge management principles*, *project management*, *project management effectiveness*, *project success*, *project failure*, *post-war knowledge management*, *post-war project management*, *post-war project success*, and *post-war project failure*. Due to the limited literature on post-war KM influences on PM effectiveness, I explored multiple documentations from previous years with emphasis on peer-reviewed journals, books, and professional journal articles.

Even though sources of literature obtained for each keyword or phrase were from multiple databases, some databases featured more literature on some keywords and phrases than other databases. Database sources listed for the keywords and phrases represent databases that featured more literature on the keywords and phrases than other databases. I obtained literature on KM, KM concepts, and KM principles from Science Direct, ProQuest, the Walden University Library, Sage premier, and Google Scholar databases. I used Business and management databases namely; EBSCOhost, Emerald, ABI/INFORM Complete, and Sage Premier to obtain literature on project, effectiveness, project management, project management effectiveness, project success, and project failure. Literature obtained in relation to post-war context namely; post-war knowledge

management, post-war project management, post-war project success, and post-war project failure were from Google Scholar and Liberia Government Executive Mansion Website.

Conceptual Framework

I derived the conceptual framework for this study from the Resource-Based View (RBV) of organizations (Penrose, 1959, as cited in Truijens, 2003), and the Knowledge-Based View (KBV) of organizations (Grant, 1996; Mbhalati, 2012). Theories of organizations propounded by researchers consist of concepts and models that clarify and predict structures and behaviors of business enterprises.

Resource-Based View

The RBV of organizations is a modern-day theory that focuses on an organization's internal resources and provides insights on strategic and organizational issues (Almari & Gardiner, 2014; Penrose, 1959, as cited in Truijens, 2003). An organization's resources could be tangible such as location, capital, and equipment; or intangible such as entrepreneurial orientation, reputation, knowledge, and skills (Wernerfelt, 1984). Barney (1991) posited that capital resources can be categorized into three groupings namely; physical capital, human capital, and organizational capital. Physical capital resources referred to non-human assets used for production (Barney). Examples included machines and buildings. Human capital resources such as competencies, experiences, viewpoints, connections, and insights represented employees' collective efforts to deliver business products through application of knowledge, skills, and expertise (Ting, 2012; Zehri et al., 2012). According to Cassol et al. (2016), human

capital represented pooled human capacity to accomplish productive tasks, and to exploit Intellectual Property. Human capital is inherent in people, and an organization cannot own it. Organizational capital resources referred to processes and systems such as culture, official reporting structure, and reputation on the market (See Silvius & Schipper, 2014; Zehri et al., 2012).

Resources are the basis of RBV and can be a representation of performance differences among organizations (Netland & Aspelund, 2013). Gaya et al. (2013) posited that the quality of resources demonstrated why organizations possessing certain echelons of competitive advantage obtained higher returns. Resources and products are two key components that influence an organization's continued existence and competitiveness (Balashova & Gromova, 2016). As some products may require several resources to produce, several products can be derived from some resources. Specifying dimensions of an organization's resource requirements would provide inference about the organization's activities on the market (Barney et al., 2001). Wernerfelt acknowledged the possibility of identifying market events of an organization's major product by specifying the organization's resource profile.

Cao et al. (2014) posited that an organization's management decisions for implementing market and project strategies were based on strategic resources. Organizational decisions related to market and project strategies influenced the organization's value chain processes at corporate and project levels based on availability of internal resources. The position of Cao et al. was in concurrence with Barney that chance factors contributed to acquisition and use of resources needed to implement

decisions made by the organization's managers. Effective integration of organizational resources, strategic decisions, value chain, and change management processes would contribute to maintain the organization's competitiveness on the market (See Cao et al., 2014).

The RBV represents an opportunity to link business success or failure to micro-organizational processes (See Almari & Gardiner, 2014; Barney et al., 2001). According to Barney, four conditions satisfied by advantage-creating resources were value, rareness, inimitability, and non-substitutability. In terms of an organization's operations, Barney defined value to mean that resources must be adequately strategic to be used for exploiting opportunities and counteracting threats within the organization's operational domain, and rareness to mean resources should be classified as part of the organization's current and prospective capabilities for competition on the market. In Barney's view, inimitability meant resources should be distinct either through exclusive fundamental ambiguity, historical conditions, or social complexity whereas non-substitutability referred to resources not having tactically comparable replacements.

Significance of an organization's resources and competences shows extent to which the organization's resources and competences are difficult to purchase, sell, replicate, or substitute (Netland & Aspelund, 2013). Examples include invisible assets such as tacit knowledge and established trust in the organization's history that cannot easily be transacted, translated, or replicated by the organization's competitors (See Silvius & Schipper, 2014). Balashova and Gromova (2016), and Gaya et al. (2013) established that an organization's competitive advantage emerged from procedures of

accumulation and effective use of resources rather than business dynamics. In simple terms, an organization's competitive advantage resulted from how the organization acquired and used resources. Project managers working within the post-war context can use principles of the RBV to achieve competitive advantage and reduce project failure.

Truijens (2003) posited that the significant distinction between an organization's capabilities and its resources was that resources were inputs into production processes whereas capabilities referred to capacity of an assemblage of resources with prospects of undertaking tasks or activities. Effective resource management by an organization would depend on capabilities within the organization. According to Jang (2013), and Balashova and Gromova resources did not by themselves guarantee sustainable competitive advantage of an organization. In concurrence, OECD (2013) concluded that organizational leaders used knowledge that delineated their organization's cultural, operational, and strategic resources to create new products and services. Related concepts to the RBV that supported my study included natural resource-based view (Hart, 1995); and intellectual capital view (Ting, 2012) discussed as follows:

Natural Resource-Based View

Hart (1995) used the theory of competitive advantage in relation to an organization's connection with the natural environment to investigate the natural resource-based view. Three interrelated strategies that Hart identified to in connection with an organization's sustained competitive advantage are sustainable development, product stewardship, and pollution prevention. Hart concluded that the RBV was insufficient for ascertaining future sources of competitive advantage for an organization

with narrowly defined operational environment. As an alternative, Hart posited that focusing on natural resources of an organization would open a new investigation domain and productive opportunities for further research.

Employees use the organization's strategic capabilities to transform key valuable and non-substitutable resources such as intellectual (tacit) and explicit resources to attain the competitive advantage (Hart, 1995). Hart listed technology, production, and distribution as an organization's strategic capabilities required to create competitive advantage through cost reduction, preemption, and use of sustainable approaches to secure the organization's future position on the market. The relationship between an organization's resources, capabilities, and competitive advantage fits within the context of natural resource-based view. Organizations implementing projects in the post-war environment in Liberia could benefit from considering components of the natural resource-based view within their business environments to enhance competitive advantage and reduce project failure.

Intellectual Capital View

Intellectual capital of an organization can be described as the organization's capability to make use of information, organizational knowledge, structures and flows, client relationships, and distinctive methods (M. W. J. Khan, 2014; Ting, 2012). Hashemnia et al. (2014) asserted that different researchers had categorized intellectual capital into three main components namely; human capital, structural capital, and relational capital. Each capital component had significant impact on the organization's

financial and project performance (See Cassol et al., 2016). The following are further elaborations of intellectual capital view components mentioned by Hashemnia et al.:

Human Capital. Ting posited that human capital was immensely essential to global knowledge-based competitive business environment, and it represented the value provided by employees of a business through effective use of knowledge, skills, and expertise. Integrating KM principles and PM dynamics to reduce project failure could result from effective use of employees' knowledge, skills, and expertise as posited by Ting. Human capital of a business is the collective human capability for solving problems of the business and taking advantage of its intellectual property (See Cassol et al., 2016; Hashemnia et al., 2014). According to Mhedhbi (2013), the foundation of all tacit knowledge was human capital built in people and not owned by organizations. Use of human capital comprised how effectively an organization was able to use its people resources for creativity and innovation (Asare et al., 2013; M. W. J. Khan, 2014). Effective use of human capital by project managers within Liberia's post-war environment could be essential for improving PM effectiveness and reducing project failure.

Structural Capital. Structural capital is the supportive non-physical infrastructure, organizational practices, and databases of an organization that empowers the human capital to function effectively (Hashemnia et al., 2014; Ting, 2012). It includes procedures, trademarks and patents, image of the organization, business identity, information system, proprietary software, and databases (Asare, et al., 2013). Researchers expounded three subcategories of structural capital namely organizational capital, process

capital, and innovation capital. Whereas organizational capital comprised philosophy and schemes for harnessing an organization's competencies (M. W. J. Khan, 2014; Ting, 2012) process capital comprised methods, processes, and strategies for implementing and enhancing provision of goods and services (Mhedhbi, 2013); and innovation capital comprised intellectual property in terms of patents, trade secrets, trademarks and copyrights, and intangible assets embracing all other talents and theories by which organizational leaders run their organizations (Ting, 2012). To reduce project failure within Liberia's post-war environment, organizational leaders and project managers could ensure well-defined and well-coordinated structural capital for effective PM.

Relational Capital. Relational capital consists of elements of an organization that have value by virtue of the organization's interactions with customers (Asare, et al., 2013; Hashemnia et al., 2014). These include customer relations, supplier relations, features and trade names, licenses, and authorizations (Ting, 2012). The separation of relational capital from human capital and structural capital demonstrated its dynamic significance to the organization's worth (Mhedhbi, 2013). The value of relationships maintained by an organization with its customers and suppliers constitutes goodwill.

Mhedhbi presented a model of value creation from intangible capital through interactions of human capital, structural capital, and relational capital. Within Mhedhbi's model, knowledge conversion conception used Nonaka and Takeuchi's (1995) processes of externalization, socialization, and internalization to demonstrate how value creation occurs. According to Mhedhbi, the processes interrelated through internalization where knowledge from organizational (structural) capital and relational (customer) capital were

transferred into human capital, socialization where human capital and organizational capital were transferred into relational capital, and externalization where relational capital and human capital were transferred into organizational capital. Focusing on Mhedhbi's model could strengthen efforts by project managers implementing projects within the post-war environment in Liberia to enhance value creation for competitive advantage and reduce project failure. Project management dynamics and KM principles were consistent with tenets of the intellectual capital view for project managers to strengthen efforts to reduce project failure.

One pivotal work undertaken in line with the RBV was about contributions of RBV and entrepreneurial orientation on small organizational growth by J. J. Ferreira et al. (2011). The research objective of J. J. Ferreira et al. was to provide a convenient structure to identify tendencies of small organizations to engage in entrepreneurial orientation. J. J. Ferreira et al. emphasized the need for organizations to invest in resources that were more productive, developed greater entrepreneurial orientation, and developed higher-level capabilities for increased growth. The assertion of J. J. Ferreira et al. is consistent with Grant (1996) and Balashova and Gromova (2016) that under the RBV an organization is perceived to possess resources and capabilities internally maximized through strategic positioning by its management team to develop the organization's future resource base. Establishing entrepreneurial orientation to develop an organization's future resource base could set the stage to enhance competitive advantage and reduce project failure within the post-war environment in Liberia.

Knowledge-Based View

The knowledge-based (KBV) is an extension of the RBV and originates from strategic management literature (Grant, 1996; Mbhalati, 2012). With KBV an organization's management team creates value by championing efficient knowledge creation and transmission (Nickerson & Zenger, 2004). Grant (1997) and Mbhalati agreed that knowledge-based resources were the most strategically important, socially intricate, and typically challenging resources to replicate within an organization under KBV. Van Reijsen et al. (2014) posited that formal adoption of KM policies by an organization produced more impact on the organization's dynamic capability than could be achieved with social capital. Principal factors of an organization's sustained competitive advantage resulting in continuous superior business performance are its diverse knowledge resources and capabilities (Afzal & Afzal, 2014). According to Sokhanvar et al. (2014), integrating KM principles in PM practices could facilitate organizational performance improvement and reduce project failure.

Abbasnejad et al. (2011) conjectured that the KBV provided a platform for integrating evolutionary changes in management philosophy for business corporations and academic institutions. The focus of business corporations on modifying their management systems, business strategies, and organizational structures to meet demands of emerging knowledge-based economy can be blended with theoretical perspectives of academic institutions (Judrups, 2015). Gomez et al. (2014) supported the position of Judrups by surmising that knowledge characteristics and its indispensable role in production formed the basis of blending business corporations' foci with academic

institutions. The blend would bring to the fore, interpretations of KBV in applying principles of management to strengthen inter-organizational relationships, management systems, business strategies, and organizational structures (See Abbasnejad et al., 2011). According to Abbasnejad et al., a platform provided by the KBV would support integration of business corporations' management philosophies with those of academic institutions. Organizational leaders could use the platform to guide business corporations and academic institutions to modify their operations, including PM, to suit the emerging knowledge-based economy (See Gomez et al., 2014).

The following are some essential KBV attributes:

- An organization's most important resource for production is knowledge (Grant, 1997).
- Creation, transfer, and transformation of knowledge into competitive advantage are reasons why business organizations exist (Mbhalati, 2012).
- Different stocks of knowledge and capabilities to use and develop new knowledge can account for differences in performance between business organizations (Gholami et al., 2013).
- Human beings are intentional and intelligent agents of knowledge and are bounded by intellectual limitations (Bhatti et al., 2013).
- Knowledge is acquired by action and is demonstrated in many forms at multiple levels within an organization (Nafei, 2014).

- Knowledge can be in the minds of individuals, embedded in an organization's processes, or codified in repositories such as databases and books (Handzic & Durmic, 2015).
- Knowledge can either be expressed in explicit form, or remain tacit (Nonaka & Toyama, 2015).
- The type of knowledge possessed by an organization influences how knowledge leveraging and transmission can take place (Gonzalez & Martins, 2014).
- From the business organization's value creation point of view, shared tacit knowledge is the most significant knowledge type (Grant, 1997).
- Dynamism of knowledge makes it possible to be continuously re-interpreted and adapted for learning and change processes (Nafei, 2014).

Applying KM principles in PM is essential for reducing project failure and improving organizational performance (Sokhanvar et al., 2014). Effective management of an organization's diverse knowledge-based resources and capabilities can increase competitive advantage, improve organizational performance, and reduce project failure. Under the KBV, knowledge is considered as the dominant dynamic resource generated by individuals and deposited within individuals (Mbhalati, 2012). The KBV considers an organization's employees as major knowledge stakeholders (Grant, 1997). According to Van Waveren et al. (2017), a strategic combination of knowledge characteristics, knowledge types, tools, and mechanisms would determine the efficiency and success of project knowledge transfer within an organization. Such a combination could enhance

project managers' efforts to use KM principles to manage projects within the post-war environment in Liberia to reduce project failure. Several researchers considered the following options to offer solutions to address the management challenge:

Role of an Organization in Knowledge Resources Development

Under the KBV, an organization permits individuals to focus on developing specialized capabilities such as knowledge-based aptitudes and management skills (Gonzalez & Martins, 2014). An organization establishes mechanisms through which individuals could harmonize and integrate diverse knowledge bases to transform inputs into outputs (Takeuchi, 2013). Knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization are such processes that could result in harmonizing and integrating diverse knowledge bases to generate an organization's products as posited by Takeuchi. According to Price et al. (2013), production of goods and services by an organization would require application of various types of specialized knowledge. Organizational leaders must organize knowledge such that assembling its various types would not undermine employees' specializations especially in harmonizing and integrating knowledge for PM (Pension et al., 2013).

Organizational Design and Knowledge Integration

Organizational design and devolution of decision-making powers internally are two interesting and far-reaching consequences of interest with the KBV (Gonzalez & Martins, 2014; Grant, 1997). The KBV provides an understanding about deficiencies using hierarchical structures as an organizing device for integrating knowledge within an organization. Ineffectiveness of using hierarchy as a knowledge integration mechanism

shows clearly when bulk of the knowledge is tacit and not transferred easily through managers' coordination of subordinates' efforts (See Nickerson & Zenger, 2004). Hierarchical deficiencies are important points to consider for addressing project planning, implementation, monitoring, and evaluation issues. Emerging tendencies in organizational design focus efforts on accessing and integrating employees' tacit knowledge with full acknowledgement of barriers to transmitting such knowledge (See Leal-Rodríguez et al., 2013).

According to Grant (1997), use of team-based structures such as in projectized organizations where knowledge requirements determined team compositions was a response toward addressing hierarchical deficiencies. Team-based organizations recognize that direct participation of individual specialists facilitates knowledge integration process (Grant, 1997; Nickerson & Zenger, 2004). With this notion, I deduced that without access to specialist knowledge, supervisors cannot effectively coordinate knowledge integration within their organizations for effective PM. A team-based non-hierarchical organizing strategy that allows an organization to access and use employees' individual knowledge situated at high and low levels is an illustration of total quality management (See Grant, 1997). Such non-hierarchical arrangements for managing organizational knowledge may contrast PM principles that rely on hierarchical arrangements for knowledge integration.

Organizational Capability and Knowledge-Based Competences

The KBV considers microstructure of competences within an organization as team-based amalgamation of employees' specialist knowledge (Mbhalati, 2012). The scope of knowledge integrated demonstrates complexity of the organization's capabilities. Understanding characteristic challenges encountered in developing new capabilities would require assessing knowledge integration mechanisms within an organization (Bhatti et al., 2011; Grant, 1997). Capability development processes within an organization becomes slow and uncertain if it requires integration of knowledge across a wide-ranging base and necessitates formation of closely linked structural procedures (Grant, 1997). By inference, the KBV conjectures that an organization's capability development process would involve long-term evolutionary progression and limit authority of the management team to generate new capabilities within the organization. Long-term capability development processes within an organization contrasts with quick assemblage of competences to implement projects. Project managers operating within Liberia's post-war environment should find alternative sources of capabilities to implement projects when their organizations cannot provide requisite project implementation capabilities.

Knowledge Replication

One of the keys to realizing competitive advantage by an organization is to achieve replication internally and avoid external replication by competitors (See Andrews & Criscuolo, 2013; Grant, 1997). Developing and sustaining an organization's competitive advantage would require assessing the organization's capability to integrate

employees' specialized knowledge. Andrews and Criscuolo concluded that an organization's challenge is preventing unlawful external knowledge replication while promoting internal knowledge replication. Project managers implementing projects within Liberia's post-war environment should guard against unlawful external knowledge replication by their competitors to forestall project failure. One strategy to address this challenge is Wernerfelt's (1984) proposition to use more sophisticated integration mechanisms to widen the span of knowledge integration within an organization to prevent unlawful replication by potential rivals. The KBV provides interpretations of processes for structuring and internally replicating an organization's capabilities (Grant, 1997).

Knowledge Transfer Boundaries

The KBV provides impetus to look beyond analysis of transaction costs and have a better understanding of an organization's principal knowledge transfer boundaries (Grant, 1997). Feasibility of separating producers and customers will depend on knowledge transfer boundaries required between them. According to Paraponaris and Sigal (2015), contextualization makes knowledge transfer difficult in terms of identifying relevant knowledge for transfer, complexity of knowledge transfer processes, and cultural boundaries between the knowledge transfer units. Except for situations where an organization's products embody its knowledge, markets are typically not effective for knowledge transfer (See Grant, 1997; Urbancová, 2013). To maintain competitive advantage and reduce project failure, project managers operating within Liberia's post-war environment should ensure effective knowledge transfer boundaries for the products

generated by their projects. The complexity of knowledge transfer mechanisms requires multiple boundaries to be distinguished in the performance of project tasks (Van Waveren et al., 2017).

Decision-Making and Knowledge Posting

An organization's performance is dependent on possessors of decentralized knowledge essential for making operational decisions (Verle et al., 2014). Ranking of decision-making authority within an organization's hierarchy starts with owners as highest authority, to board of directors, and to senior management staff, and then to multiple lower levels of responsibility within the organization (Grant, 1997). Decision-making hierarchy is important for project implementation and efforts to reduce project failure within the post-war environment in Liberia. Burton et al. (2015) were in concurrence with Grant (1997) that the type of knowledge required for decision-making determined whether the decision-making process mandated centralization or decentralization.

Employees who have access to decentralized information are able to make innovative decisions and address issues more effectively (Verle et al., 2014). Furtherance to the assertion by Verle et al., Judrups (2015) posited that organizational tasks requiring tacit or distinctive knowledge that was not readily transferable necessitated moving to the places where the knowledge was situated. Grant (1997) surmised that decisions requiring explicit and easily aggregated knowledge mandated centralization. Emphasis under the KBV was the need to situate requisite knowledge within reach of relevant decision-making authorities (See Grant, 1997; Moustaghfir, 2012). By situating knowledge at

relevant locations for decision-making project managers working within the post-war environment in Liberia may improve project performance and reduce project failure.

Discussion on the RBV and the KBV

Complementarities in contributions to organizational operations and performance confirmed that KBV was an extension of RBV. From my review of the literature, appropriate use of principles from KBV and RBV by organizational leaders could enable employees to increase competitive advantage and improve an organization's business performance. Whereas valuable and rare resources were the foci of RBV to protect an organization against resource simulation, transfer, or substitution, KBV focused on the organization's diverse capabilities and knowledge sources as the most important and socially sophisticated resources difficult to replicate by imitators.

However, the literature review indicated a contrast between the RBV and KBV. With RBV, resources of an organization did not have equal significance or prospective capabilities to be included as part of the organization's sources of sustainable competitive advantage. With KBV, an organization's diverse capabilities and knowledge sources were principal factors of sustained competitive advantage for superior business performance. In each case, organizational leaders should focus attention on resources that have potential to generate advantage and improve organizational performance.

The RBV and KBV provided insights into application of strategic resources within an organization to ensure long-term productivity. Effectiveness of managing projects to reduce project failure within an organization will involve appropriate use of resources in accordance with principles of the RBV and KBV. The conceptual foundation

of my study focusing on management strategies and KM principles that project managers can use to reduce post-war project failure rates in Liberia was consistent with the RBV and KBV.

Literature Review

Liberia Education Sector Context

The Liberia education sector was affected severely by the country's civil war that occurred between 1989 and 2003 (MOE, 2010). The government of Liberia and the international community implemented multiple governance priorities to support economic development and inhibit recurrence of war (See MOE, 2010; Roberts, 2015). The government reforms included efforts to eliminate public sector corruption, streamline business regulations to attract foreign investment, and revamp education (MOE, 2010). Projects implemented by international non-governmental organizations registered with the MOE included teacher training, provision of instructional materials, curriculum development, construction / rehabilitation of school infrastructure, enrolment drive especially for girls, adult literacy, school feeding, and improvement of student learning and achievement (See MOE, 2010; Nimely & Jappah, 2015).

According to the World Food Program (WFP, 2016), major challenges faced by the Liberia education sector included lack of qualified teachers, inadequate infrastructure, and insufficient teaching and learning materials. A 12% steady increase in net enrollment ratio from 2007 to 2013 was not sufficient to reach the 2015 target of universal primary education (MOE, 2015; WFP, 2016). Primary school gross enrolment ratio for 2014 was 96% with male to female enrolment ratios practically equal (Liberia Institute of Statistics

and Geo-Information Services [LISGIS], 2014; WFP, 2016). However, male to female enrolment ratios for secondary school levels appeared to increase more for boys than girls because some girls dropped out of school due to early marriage or early pregnancy (See LISGIS, 2014).

Roberts concurred with the MOE (2010) that even though the government of Liberia implemented a free and compulsory primary and secondary education program for students aged five to 16 years, the education sector's operations were hindered by inadequate schools and supplies, lack of qualified teachers, and corruption. Enforcement of school attendance was loosely enforced and unmonitored, and children attained only 10 years of education on average (LISGIS, 2014). Challenges faced by the education sector was exacerbated by the Ebola virus disease (EVD) outbreak in 2014 and 2015, and the current COVID-19 pandemic that necessitated suspension of public sector operations including education projects (See MOE, 2015; United Nations Development Programme [UNDP] Liberia, 2020). According to UNDP (2020), schools were closed during the Ebola outbreak and COVID-19 pandemic periods of the academic year. Loss of critical manpower due to deaths from the civil war, Ebola outbreak, and the COVID-19 pandemic resulted in a workforce that had competency challenges in managing projects effectively and efficiently (See Roberts, 2015; The World Bank, 2020).

Even though no scientific data existed for overall education project success or failure rates, Nimely and Jappah (2015) and Roberts agreed that project failure occurrences had persisted due to less experienced PM teams, and use of loosely enforced PM strategies for project implementation. Although significant project targets were

achieved, planned performance objectives were not achieved for most education sector projects (MOE, 2015). Project contributions to achievement of national and international educational goals by the MOE were not realized as expected (MOE, 2015; Roberts, 2015). For example, achieving the ‘education for all’ and Millennium Development Goal of 100% primary school completion was not realized by 2015 as planned (MOE, 2015). Financial, personnel, and material support to projects from the MOE were not sufficient to address competency and resource challenges faced by project teams (MOE, 2015; Roberts, 2015). Roberts surmised that the Liberia Ministry of health and social welfare was better resourced than the MOE to implement projects due to donor preference for supporting health initiatives than education. In contrast, Nimely and Jappah identified weaknesses in project planning, monitoring, supervision, and evaluation as some of the key capacity challenges for project managers implementing projects for the MOE.

In the Liberia education sector plan (ESP) 2010-2020, the MOE and its partners outlined policies and strategies aimed at developing and reconstructing education as a solid basis to improve enrolment and quality of teaching and learning. Principal objectives of the education sector plan were to provide guidelines for developing medium term plans by the Ministry and guiding monitoring and evaluation of activity implementation (MOE, 2010). Nimely and Jappah posited that improving leadership quality and technical capability of project teams especially in monitoring and evaluation could improve project implementation and reduce project failure. On the other hand, Roberts suggested that streamlining organizational structures would facilitate effective PM and increase project success.

According to LISGIS, a major limitation of the Government of Liberia and its development partners was weakness in compiling and disseminating data to measure and articulate impact of projects. Roberts concluded that the use of information for decision-making within the education sector was a big challenge because of inadequate data systems to provide requisite data on timely basis. Ginsburg and Arrington (2015) confirmed Roberts' assertion by positing that the education management information system was weak in providing relevant data for tracking progress of projects implemented by the MOE. Lessons learned from previous projects were not adequately shared with successive projects to improve implementation strategies due to underdeveloped monitoring and evaluation systems for projects implemented within the education sector (Nimely & Jappah, 2015). I deduced from the literature that the MOE had less developed structures to create, acquire, store, utilize, and share knowledge for effective PM (See Nimely & Jappah, 2015; Roberts, 2015). These observations necessitated my desire to explore what management strategies and KM principles project managers working with Liberia's MOE can use to reduce post-war project failure rates.

Management Theory

Fredrick Taylor first proposed the scientific approach to management in early 1900's, and started the era of modern management (Witzel & Warner, 2015). Taylor's approach focused on breaking multifaceted tasks into an arrangement of simple subtasks to increase worker productivity (Dent & Bozeman, 2014). Four principles of scientific management proposed by Taylor were development of a true science, scientific selection of the workman, workman's scientific education and development, and intimate

relationship between an organization's management team and other employees (Huang et al., 2013). Taylor's proposition was a departure from 'ordinary management,' where a supervisor within an industry was expected to have excellent knowledge and skills. With scientific approach to management Taylor posited that ordinary workers could outperform brilliant captains of industry and improve efficiency (Witzel & Warner, 2015). Three important areas of modern management theory developed by other researchers were the following: Hawthorne Works experiments and the human relations movement by Elton Mayo, idealized bureaucracy by Max Weber, and principles of administrative science by Henri Fayol. Application of principles of scientific management and modern management theory to projects implemented within contexts such as post-war Liberia could improve PM effectiveness and reduce project failure.

Working environments within organizations have changed immensely after modern management perspective was introduced by Taylor (Dent & Bozeman, 2014). Contemporary managers face challenges fulfilling corporate responsibilities when dealing with virtual teams, local community involvement, resource policies, shareholder wealth, and diversity of cultures. According to Kemp (2013), principles of scientific management have developed over time and are found within postmodern management models for measuring knowledge creation and dissemination, involvement of workers in decision making processes, pay related performance, total quality management, and teamwork.

My study focused on identifying management strategies and KM principles that project managers working with Liberia's MOE can use to improve PM effectiveness and reduce project failure. Three modern theories of management include system approach,

contingency perspective, and chaos theory (Akhmeta et al., 2014; Bogers et al., 2017). Systems approach looks at how components of an organization interact to create a larger system whereas contingency perspective recognizes how internal and external factors of different business situations could impact outcomes (Bogers et al., 2017). Chaos theory recognizes existence of systems that do not have specific direction and are not predictable in the real world (Akhmeta et al., 2014). With the chaos theory, a significant impact can be obtained in an area of a system by a small change in another area within that system (Condorelli, 2016). Project implementation within Liberia's post-war context could be undertaken using principles of the three modern theories to create changes within the larger society by observing how projects interact with the operational environments and use small changes to achieve goals and objectives within the larger society.

Consistent with modern approach to management, Huang et al. posited that KM is an important theme within management theory because managers use KM procedures to manage intellectual property. Use of new knowledge by organizations implementing projects within contexts such as post-war Liberia requires project managers to possess new proficiencies such as strategic and competitive leveraging of knowledge to reduce project failure. Contemporary management models distinguish knowledge workers and provide them freedom to align their competences with organizational objectives (Stylianou & Savva, 2016). Modern management theories support investigation of management strategies and KM principles that project managers can use to reduce post-war project failure rates in Liberia.

Key Themes and Concepts

Classification of research can be based on multiple criteria such as knowledge it generates, research participants it engages, the problem necessitating research, methodology employed, and intended users of the research results (Aliyu et al., 2014). I expound key themes and concepts related to PM dynamics and KM principles investigated in this study as follows:

Project Management

A project is a unique temporary endeavour embarked on by a business entity to achieve predetermined objectives classified as outputs, outcomes, or benefits (L. Larson & Drexler, 2010). It is implemented differently than business-as-usual activities, and brings people together temporarily to concentrate on tasks to achieve pre-defined objectives (Uddin et al., 2013). Project failure occurs if a project team does not achieve expected objectives according to acceptance criteria for success within an agreed budget and schedule (Little, 2011). Consistent with Little, Keskes (2014) concluded that prevention of project failure requires use of pragmatic PM approaches and organizational commitment focused on managing separate work packages to accomplish predetermined objectives. Project managers working within Liberia's post-war environment could engage their staff to manage separate work packages to improve project implementation strategies and reduce project failure. Although Verle et al. (2014) suggested that managerial competences form basic requirements for project teams to perform tasks, Gardiner (2014) argued that leadership was a key skill necessary for PM.

Project management can be described as the effective and efficient use of knowledge, skills, modern techniques, and experience to execute projects (PMI, 2014b; Too & Weaver, 2014). In addition, PM increases strategic competencies of organizations to be more competitive in markets by tying project results to business goals. Project management aptitudes can be drawn from integration, scope, time, cost, quality, human resources, procurement, risk management, communication, and stakeholder management (PMI, 2013b). Whereas the PMI (2013a) recommended identification and understanding of stakeholder needs and influence as critical in PM to prevent project failure, Sokhanvar et al. (2014) concluded that applying KM principles in PM was essential for reducing project failure and improving organizational performance. A key dynamic that differentiates PM from general management is that PM has an ultimate deliverable and a predetermined lifespan whereas general management is usually an on-going process. Project teams need extensive assemblage of technical skills, business awareness skills, and people management skills to manage their projects effectively. Within Liberia's post-war environment, project managers could assemble or develop such skills among their staff to improve project implementation and reduce project failure.

The Three Constraints

Three principal interdependent constraints faced by project implementers are time, cost, and scope; and together they constitute the PM triangle (Kocherla, 2012). Effective management of the three constraints is pre-requisite for executing projects effectively and making germane decisions to reduce project failure (See Ebbesen & Hope, 2013). Project managers use the PM triangle to investigate possible challenges during project

implementation (Vasista, 2017). According to Wyngaard et al. (2012), interconnectedness of the project triangle's elements influences quality as a central characteristic of effective project implementation. I discuss the three constraints faced by projects as follows:

Time. In a project implementation cycle time is an essential and uncontrollable factor (Vasista, 2017). Although project teams aim to complete projects within the stipulated periods, the nature of project tasks may require the project teams to complete their projects within a shorter or longer period than originally anticipated. Task completion rate by a project team depends on multiple factors such as total number of people engaged to work on the project and the project team members' knowledge, skills, and experiences (See Mathur et al., 2013). According to Ofori and Deffor (2013), lack of resources is the reason for projects to fail in terms of time. Failure to meet deadlines during project implementation within contexts such as post-war Liberia could create adverse effects on project execution and completion rates, and lead to project failure.

Cost. For every project, there should be estimated costs or budget for resources needed by the implementation team, and the project manager should be aware of it (Wyngaard et al., 2012). When organizational leaders allocate additional resources to meet demands for supplementary project activities, the project team would incur additional costs to implement such activities (Ebbesen & Hope, 2013). Kocherla posited that a project team would use their project budget as guide to ensure effective project implementation within the specified cost range. Even though the post-war environment in Liberia is complex, project managers could engage their staff to adhere to the positions of

Wyngaard et al., Ebbesen and Hope, and Kocherla to implement their projects more efficiently to reduce project failure.

Scope. The scope of a project comprises a list of products to deliver by the project team (See L. Larson & Drexler, 2010). Without a well-defined project scope, organizational leaders would find it difficult to assess a project's performance. A project team could prevent project failure through effective management of the project's scope to influence time and cost of implementation (Ofori & Deffor, 2013). Project managers working within Liberia's post-war environment could use well-defined project scopes to identify and promptly deliver expected products to reduce project failure.

Quality. The purpose of applying appropriate project delivery strategies is to ensure quality in delivery of products even though quality is not a component of the PM triangle (See Ebbesen & Hope, 2013). According to Wyngaard et al., managing components of the PM triangle implies managing quality. Although high quality comes at a high cost, the case is not always the same for all projects (See Ofori & Deffor, 2013). In addition, achieving project targets by using low-quality resources does not guarantee overall project success (Ebbesen & Hope, 2013). Quality can be a significant measure as project deliverable. Within the post-war environment in Liberia, appropriate allocation of resources by organizational leaders to enable project teams to deliver required quality products could reduce project failure.

The Project Cycle

Fundamental processes in phases of project cycles are outlined as follows:

Project Incubation Phase. This is the feasibility phase prior to initiating the project when essential information about the impending project is gathered, analyzed, and interpreted contextually to determine whether or not the project initiation phase could begin (Archibald et al., 2012; Association for project management website, n.d). During the project incubation phase, various types of information are gathered to identify and address cognitive constraints (Sinha, 2014).

Project Initiation Phase. Project initiation phase is used to describe the project business case and to substantiate assurance of implementing the project as planned (L. Larson & Drexler, 2010). Expected deliverables of the project and how the deliverables will be achieved are recapitulated during the project initiation phase as a safeguard for managing changes during project implementation phase (PMI, 2014b). During this phase, team members participating in the project clarify responsibilities assigned to them (See L. Larson & Drexler, 2010). To manage stakeholders' expectations the project team presents detailed descriptions of project objectives, timescales, and constraints alongside the project success criteria (PMI, 2014b).

Project Planning Phase. This phase involves development and operationalization of a PM plan that outlines project implementation strategy, monitoring and controlling plan, communication plan, schedules, and costs (Archibald et al., 2012). A PM plan ensures that assignment of responsibilities guarantee timely completion of inter-dependent tasks and parallel tasks (See Alotaibi et al., 2016; Tesfaye et al., 2016). Tools

such as Gantt Chart are available for developing and operationalizing PM plans (Tesfaye et al., 2016; Trojanowska & Dostatni, 2017).

Project Implementation Phase. During project implementation, scheduled project activities are undertaken based on responsibilities assigned to project participants (See PMI, 2014b). Individuals or groups assigned tasks are expected carry out the tasks according to stated details and timescales, and to reach completion based on the task completion criteria. A project manager is assigned responsibility to manage individuals or groups participating in the project, tasks and risks, and changes that might occur during project implementation phase (Sinha, 2014).

Project Monitoring and Controlling Phase. Project monitoring and controlling involves continuous monitoring of activities implemented to ensure that the project remains on track in terms of budget and schedule, and that sufficient resources are available for delivery of anticipated benefits (See L. Larson & Drexler, 2010). Sinha posited that a project team might change projections, milestones, and deadlines to meet the project's context based on monitoring information obtained. Continuous communication should be maintained among the project's stakeholders based on their information needs (PMI, 2013b), and to support management of service providers working with the project.

Project Closing Phase. A project team formally closes a project according to approved conditions for ending the project (Association for project management website, n.d). Closing a project involves conducting an end of project review to authenticate project successes and failures, and to identify contributing factors to the project's

performance (Archibald et al., 2012). Project implementation and end of project reviews can be used to identify shortcomings for each phase of a project cycle. Reviews help assess systematic and structural issues of organizations implementing a project as opposed to issues specific to the project (See Archibald et al., 2012). Information obtained from in-depth reviews can be used to plan remedial actions, and disseminated throughout the host organization. Closing a project should be undertaken in a controlled manner.

Post Project Evaluation Phase. The project team and the parent organization undertake post project evaluation after the project closing phase, and is generally an internal evaluation (Sinha, 2014). During this phase, the evaluation team assesses extent to which a project has been successful apart from the products delivered. According to Archibald et al., four dimensions considered during post-project evaluation are project management dimension, product dimension, stakeholder satisfaction dimension, and cognitive constraint dimension.

As part of PM tasks undertaken at the end of project cycles, project managers and stakeholders conduct post implementation reviews to identify achievement levels of the project's predefined objectives (See L. Larson & Drexler, 2010). Such reviews permit project teams and other project stakeholders to document echelons of knowledge gained during different phases of the project (Sinha, 2014). Organizational leaders implementing projects in Liberia could interpret and communicate knowledge through end of project reviews to improve current and future project performance and reduce project failure rates (See Gholami et al., 2013). Post-war project teams in Liberia could benefit from end of project review

information to guide project planning, implementation, monitoring, and evaluation to reduce project failure rates.

Project Management Effectiveness

One essence of managing projects effectively is to ensure actual accomplishment of tasks on time (Little, 2011). Kissi and Ansah (2014) contended that numerous operational issues affect PM effectiveness internally and externally during different phases of a project cycle. Common issues that influence PM effectiveness include leadership styles, organizational practices, capacity development, change management, compensation packages, and the three constraints (R. Ahmed et al., 2013). Whereas the assertion made by R. Ahmed et al. refers to contexts other than post-war, my study investigated management strategies and KM principles that managers of post-war projects in Liberia could use to reduce project failure rates.

Project Management Effectiveness Dynamics

Types of project indicators under investigation, and categories of project beneficiaries using products delivered by the project teams characterize measures of PM effectiveness (See Todorović et al., 2013). According to Shetach (2010), fundamental measures of PM effectiveness focus on achieving predefined project performance results. Project managers, project teams, and project sponsors commonly use cost variance and time variance to assess PM effectiveness (Kocherla, 2012). In addition, performance indicators are used to confirm achievement of critical success factors specified at the beginning of project implementation processes (Shetach, 2010). Apart from measuring PM effectiveness using quality of products and services, there are significant benefits to

project clients that are generally intangible and challenging to measure (Todorović et al., 2013). Such benefits include customer satisfaction, goodwill, and reputation. Consistent with Shetach (2010), Too and Weaver (2014) posited that measuring PM effectiveness would require selection of key performance indicators based on project value measures and reflecting project stakeholder needs. I discuss five dynamics of PM effectiveness investigated by researchers as organizational structure, technical capability, leadership quality, and project success. Project managers working within Liberia's post-war environment can employ strategies to enhance the five PM dynamics to reduce project failure.

Organizational Structure. Organizational structures are representations of an organization's hierarchy of employees' workflow processes, functions, and reporting system (Tran & Tian, 2013). Leaders of an organization use the organizational structure to guide operations and staff behavior as a factor of environmental enterprise. According to H. Ferreira and Pereira (2015), organizational structures affect PM and are critical factors that influence resource availability within organizations. The Project Management Institute (PMI, 2013a) classified organizational structure into four categories as functional, projectized, matrix, and composite. Each type of organizational structure has advantages and disadvantages, and different effects on PM because of the project manager's authority within the structure (PMI, 2013a). H. Ferreira and Pereira established that the functional and projectized organizational structures occupied opposite ends of the structural continuum. The matrix organizational structure falls between the functional and projectized structures with classification as strong, balanced, or weak

matrix depending on relative authority accorded functional managers and project managers within the organization (H. Ferreira & Pereira, 2015; PMI, 2013a). Appropriate alignment of organizational structures by organizational leaders implementing projects in Liberia's post-war environment could facilitate project effectiveness and reduce project failure rates.

Rishipal (2014) outlined considerations that organizational leaders could make when selecting a project structure to include project size, innovation needs, strategic significance, departments to integrate, time allocation, budget allocation, interfaces external to the project, and resource stability. To reduce project failure in a post-war environment such as Liberia, a project team would need appropriate authority and autonomy to control Rishipal's project structure attributes.

Functional Organizational Structure. The functional organizational structure is the traditional structure commonly found among organizations, and consists of departments operating within specific or line functions (Feger & Thomas, 2012). Within the functional structure, categorization of an organization into different subdivisions is contingent upon specialist services needed such as sales, customer service, and dealing with worsened problems (Awa, 2016; Tran & Tian, 2013). According to the PMI (2013a), a functional organization operates using formal rules, coordinated plans, procedures, and budgets with resources for each department under absolute control of a functional manager. Specialists working in functional units may take up temporary project assignments and return to their normal work after completing the assignments. Feger and Thomas (2012) agreed with (PMI, 2013a) that the role of a project manager

within a functional organization was to facilitate smooth implementation of project processes whereas a functional manager made final decisions. The functional organizational structure works best for small organizations providing limited goods and services, and have different departments that are close geographically (Awa, 2016; Elsaid et al., 2013).

One key advantage of functional organizational structure is the role of a functional manager as the overall authority, which averts conflicts of interest to facilitate productive management of specialists (PMI, 2013a). Other advantages outlined by the PMI (2013a), and Awa (2016) include clear line of authority, career path well defined, comfortable and easy processes, well-maintained technical expertise, flexible resource allocation, stress-free cost controls and budgeting, manpower engagement flexibility, and strategic use of experts for better technical control.

Awa posited that staff working with functional organizations had job stability, career paths, and framework for vertical communication. Existence of a functional structure within an organization where employees work together in specialist departments enables the employees to react quickly to address issues without using extra time to set up a project (Awa, 2016). Staff of functional organizations are effective at managing routine tasks such as mass production and operational assignments (Ahmady et al., 2016; Elsaid et al., 2013). However, functional organizations have weaknesses particularly within project environments. Employees lack focus, tasks are assigned to employees across the organization, and individuals do not have sole responsibility for a project (PMI, 2013a). Consistent with the PMI (2013a), Rishipal (2014) conjectured that

operations within functional organizations could lead to conflicts among staff from the organization's departments due to poor coordination. Delayed reaction times to customers' requests, and processes required for decisions and approvals within the functional structure may slow down project coordination and integration (E. W. Larson & Gray, 2011). Due to slow response to business operations, projects implemented by functional organizations may take longer to complete.

According to Awa, functional organizations did not work well within business environments where changes in fashion and technology were frequent. Other weaknesses indicated by Awa, Elsaid et al. and the PMI (2013a) included limited authority and career path for project managers, low emphasis or accountability for projects, inadequate cross-functional coordination, absence of customer focal points, inadequate delegation of authority by managers, bureaucratic delay of work, strong corporate politics, and absence of a big picture perspective by employees. Organizations operating with the functional structure within Liberia's post-war environment could strengthen the authority of project managers to improve management strategies and reduce project failure.

Projectized Organizational Structure. Projectized organizations operate using a project-focused structure where the final authority rests with the project manager to prioritize, make decisions, and manage resources (PMI, 2013a). The project manager leads a dedicated project implementation group and works with absolute independence over the project (Feger & Thomas, 2012). Within a projectized organizational structure, staff perform tasks as project tasks and submit reports to the project manager. Project team members should be permanent staff or hired temporarily to work with the project. A

projectized organization supporting multiple projects will have, for each major project, a dedicated team assigned to it even though internal departments such as finance, legal affairs, human resource management, and marketing functions may exist to support different projects (Feger & Thomas, 2012; Wilson, 2015). The purpose of having a dedicated project team is to ensure completion of project activities without interference by organizational operations (Wilson, 2015).

Projectized organizations have advantages for PM. Project teams use shorter communication paths to promote faster decision-making and to focus resources on project objectives with full attention to tasks (PMI, 2015). Teams within projectized organizations focus on common goals. Project teams are more dedicated and more loyal, and do not have multiple managers to distract their attention as is the case with the functional organizational structure (Feger & Thomas, 2012). Projectized organizational structure allows cross-functional integration for project teams to optimize staff competences rather than focusing only on project team members' areas of expertise (E. W. Larson & Gray, 2011). Opportunity for career progression is available for project managers within the projectized structure (See PMI, 2013a). Projects implemented by organizations that adopt projectized structure within Liberia's post-war environment are likely to improve management strategies and reduce project failure.

Projectized organizations have accompanying weaknesses. A key weakness is that apart from the project manager the rest of project team members do not have long-term goals or job security within the organization as the team disbands upon completing the project (PMI, 2013a). Another weakness is that the projectized organization duplicates

the same types of resources for each project making it expensive especially with full-time resources, and functions that become redundant across projects (PMI, 2013a). Self-contained project teams may restrict technological expertise among team members and prevent staff rotation for knowledge and skills sharing. According to Wilson, difficulties arise during post-project transition phase when the project is completed and the project team members are to transition back to the line organization. Transition becomes more difficult after prolonged absence of team members from their original departments (E. W. Larson & Gray, 2011). Formulating strategies to address weaknesses associated with the projectized structure would enhance efforts of project managers implementing projects within the post-war environment in Liberia to manage projects effectively and reduce project failure.

Matrix Organizational Structure. A matrix organizational structure is a blend of projectized and functional organizational structures (PMI, 2013a). E. W. Larson and Gray (2011) portrayed the matrix organizational structure as a major innovation in management. Organizational leaders use the functional section of a matrix structure as repository for physical resources and technical expertise, and the projectized section to complete projects where teams work together to achieve common goals (Rishipal, 2014; Schnetler1 et al., 2015). The matrix organizational structure is useful for managing product development processes, and large projects by selecting employees from diverse functional disciplines and assigning them to a project while preserving their employment status (Mäkimattila et al., 2014). According to Awa (2016), a matrix organization has advantages over a functional organization when handling large projects. However, the

matrix organizational structure may not be suitable for all organizations because its success depends on the organization's focus and the types of projects implemented (Rishipal, 2014).

Depending on authority accorded the project manager and the functional manager three generally acknowledged matrix structures are weak matrix, balanced matrix, and strong matrix (Feger & Thomas, 2012; PMI, 2013a). A weak matrix structure is comparable to a functional organizational structure except that organizational leaders identify an official project manager to lead projects (Jainendrakumar, 2015). According to the PMI (2013a), functional managers in a weak matrix structure hold most power and lead their departments whereas project managers' responsibilities relate to managing the schedule, coordinating activities, collecting status, and expediting action on processes.

With the balanced matrix structure, organizational leaders identify an official project manager even though the project manager would not have overall authority over project activities and the budget (PMI, 2013a). The project manager's responsibility in a balanced matrix structure is to define the project, set the activity schedule, and monitor progress whereas the functional manager's responsibility is to allocate resources for completion of the project manager's assigned work (Burton et al., 2015). A strong matrix structure is comparable to a projectized organizational structure where the project manager has control over facets of the project such as deciding on project trade-offs and allocating functional resources (Jainendrakumar, 2015). Mäkimattila et al. surmised that organizations grow through a matrix structure as they transition between a functional organization and a projectized organization.

Schnetler1 et al. (2015) posited that a key advantage of implementing the matrix organizational structure is efficient allocation and use of easily accessible resources. Organizational staff use the matrix structure to demonstrate effective communication vertically and horizontally (PMI, 2013a). With the matrix structure, project team members are likely to secure jobs within the organization after completing their projects (Reddy & Kannamani, 2015). Other advantages of the matrix organizational structure include organizational leaders using human and material resources for projects and returning the resources to appropriate resource pools within the organization (PMI, 2013a). Additionally, selection of individuals based on project needs and using dynamic project teams that can view problems from different perspectives due to assemblage of specialists from different departments into a new environment is a strength of the matrix organizational structure (Mäkimattila et al., 2014; Tran & Tian, 2013). Under the matrix organizational structure, project managers are directly responsible for timely completion of projects within budget allocations where each project manager supervises a team to focus on specific objectives and organizational leaders better handle overall utilization of resources (Reddy & Kannamani, 2015).

Project managers have authority to manage required resources to improve accountability and track project activities (PMI, 2013a). Opportunities within the matrix structure make it possible for the organization's human resources to develop skills as they undertake tasks from one project to another. According to Mäkimattila et al., organizational staff use the matrix structure to respond to issues much more rapidly than they can do with the functional organizational structure. By adopting a matrix structure,

the organization avoids costs associated with the projectized environment, and increase benefits over the functional organizational structure (Burton et al., 2015). Using the strong matrix structure, organizations implementing projects within the post-war environment in Liberia could improve PM strategies and reduce project failure.

A key disadvantage of implementing the matrix organizational structure is complexity that makes it difficult to manage. With the matrix structure, there is strong demand for qualified human resources such that lesser skilled human resources may have unclear roles and responsibilities (Schnetler1 et al., 2015). Line managers may have less authority and may function as resource managers within a strong or balanced matrix. Poor communication between project managers and functional managers can leave the teams in a state of confusion (Reddy & Kannamani, 2015). Other disadvantages include loyalty conflicts between project managers and line managers over resources allocation (PMI, 2013a; Reddy & Kannamani, 2015), difficulty in monitoring project teams that have more independence, increased costs for project manager positions created through project teams; two bosses with unclear lines of authority, dual reporting, and confusion (PMI, 2013a); and strong dependence on individuals for success.

With the matrix organizational structure, larger projects may become strong at the expense of the organization's priorities (Awa, 2016). Over time, organizational staff may confuse large projects with a functional organization and make it difficult for resource sharing between projects. Organizational leaders adopting the matrix organizational structure within the post-war environment in Liberia could develop appropriate

mechanisms to manage associated weaknesses and enhance PM efforts to reduce project failure.

Composite Organizational Structure. An organization with composite structure uses a combination of functional, projectized, and matrix approaches by regularly changing the project manager's authority for different projects depending on circumstances associated with each project (PMI, 2013a). The project manager's authority might represent that of a projectized organization in one project, and that of a functional organization in another project. With this structure, an organization having a primarily functional department would setup a dedicated team to implement a critical project (PMI, 2013a). The dedicated team would have characteristics of a project team within a projectized organizational structure. The team would consist of full-time staff from diverse functional departments, develop its own operating procedures, and possibly operate outside the organization's formalized standard reporting structure (Awa, 2016; Rishipal, 2014). Other projects may be implemented concurrently as would be the case within a functional organization.

Within the composite organizational structure, leaders assign each employee to two bosses in two separate hierarchies within the organization (Rodrigues & Sbragia, 2013). One of the two hierarchies is functional with a boss who is super-expert in the field defining the hierarchy and ensures selection of well-trained experts in that field to work under the hierarchy (Burton et al., 2015). The other hierarchy is for project implementation with a boss who tries to use the experts to complete the organization's projects (PMI, 2013a). Grouping of projects might be by categorization such as

beneficiary types and regions. According to Burton et al., a mixed structure would be suitable for an organization that experiences increasing uncertainty and complexity in its project operations and business environment. For an organization implementing very few projects and producing standard products the leadership could form dedicated teams on need basis to focus on product lines and respond to issues needing immediate attention (E. W. Larson & Gray, 2011). Given the complex nature of Liberia's post-war environment organizational leaders could use the composite organizational structure to assign human resources strategically to implement effective project strategies to reduce project failure.

Organizational Culture. Culture denotes the way a group of people or a team does things over time, and organizations with project-friendly cultures achieve more project successes due to establishment of project awareness among staff (Ali, 2016; PMI, 2014a). The culture of a group or team manifests through a system of symbols such as attitudes, interaction patterns, skills, and methods applied to undertake tasks (Choo, 2013; Laurentis et al., 2018). The culture of an organization consists of values, beliefs, and practices maintained by its employees over time (Madu, 2011). Enhancement of an organization's competitive position and performance can be achieved by developing a learning culture among its project teams (Nafei, 2014). Choo outlined four types of organizational culture that influence organizational effectiveness: Market culture that focused on achieving goals and market success using rational goals to attain organizational effectiveness, Hierarchy culture represented by formal structures and processes to increase efficiency and consistency through internal processes to attain

organizational effectiveness, Clan culture that focused on making employees satisfied and committed using human relations and team work to attain organizational effectiveness, and Adhocracy culture that relied on using innovation and new ideas to lead to effectiveness through creation of new markets, new customers, and new opportunities. Adhocracy culture uses open systems to attain organizational effectiveness.

Each culture has influence from dominant organizational effectiveness attributes interlinked in a cyclical network. Cameron and Quinn (2011) categorized organizational effectiveness attributes into flexibility and discretion (FD), external focus and differentiation (ED), stability and control (SC), and internal focus and integration (II). Clan culture stems from II and FD, adhocracy culture stems from FD and ED, market culture from ED and SC, and hierarchy culture from SC and II (Cameron & Quinn, 2011; Choo, 2013).

According to the PMI (2014a), organizations with project-friendly cultures achieve more project successes due to establishment of project awareness among staff, dedication to organizational strategies, and healthy conflict. Conduciveness of an organization's structure to that of functional, projectized, or matrix organizational structure would be a result of the culture established and commitment among staff to PM (PMI, 2015; Rodrigues & Sbragia, 2013). The extent of mutual dependence between a project team and the host organization would determine how significantly the organization's culture supports PM. Project managers must consider the organizational culture when developing project strategies in order to obtain acceptable and understandable responses from staff (See Rodrigues & Sbragia, 2013). The culture of an

organization implementing projects in post-war Liberia should be consistent with the projectized organizational structure to contribute to reduce project failure.

Lange et al. (2008) demonstrated that progressively recognizable outcomes in organizational change and stewardship of assets are realized when an organization's leadership supports cultural transformation, values, and professional advancement. Lange et al. posited that layers of organizational culture are determinants of sustainable changes in an organization. The layers are visible attributes immediately observed by visitors, norms of behavior prescribed within the organization, values, beliefs, and assumptions about how the organization works. The propositions of Lange et al. are consistent with the four types of organizational culture outlined by Choo. Each layer has unique characteristics interlinked with the other layers. Establishing an exclusive culture for an organization would require concretizing the layers as critical features of the organization's existence (See Lange et al., (2008).

Alignment of an organization's strategy, systems, styles, skills, staff, and structure enhance establishment of shared values within the organization's culture (Nejad et al., 2015). Consistent with Cameron and Quinn and Nejad et al., Choo posited that internal organizational elements of an organization are interconnected such that changing one element requires changing the rest for organizational effectiveness. According to Nejad et al., each interconnecting element to an organization's shared values has distinct properties for conscious development by the organization's leadership. The properties developed would be shared with staff in mutual engagements through formulation and interpretation of the organization's culture (See Uddin et al., 2013). Nejad et al. presented

strategy, structure, and systems as hard internal organizational elements that are comparatively easier to identify and manage as compared to skills, staff, and style identified as soft internal organizational elements that are more likely to create sustained competitive advantage.

Technical Capability. A project team with competent technical capability is indispensable for project success (Chauvet et al., 2010). Sadikoglu and Zehir (2010) contended that organizational leaders could measure a project's performance by assessing its goal and objectives, customers' expectations, and business environment's anticipations. Evidence from an organization's past performance and engagements with competitors would enhance development of strategies to implement project activities (Frinsdorf, Zuo & Xia, 2014). The organization's past performance evidences will inform decisions made to mitigate opposing factors to efficiency. To assess performance, project targets should be set based on demands for its products and its technical capability to meet demands for products within the business environment (See Sadikoglu & Zehir, 2010). Organizational leaders engaging technically competent teams to manage projects that deliver requisite products within Liberia's post-war environment could assure reduction in project failure.

Effective communication is one important technical capability that influences attainment of project success. Jiang (2014) described communication as a core competency that could connect every project team member to a common set of actions, strategies, and goals. When actions, strategies, and goals are shared effectively by project leaders and understood by all stakeholders, achievement of project outcomes is facilitated

and project budgets are not placed at risk (See Kissi & Ansah, 2014). The PMI (2013b) posited that addressing deviations in project performance within complex environments requires using formal and informal communication strategies. Communication between stakeholders involved in a project implemented within contexts such as post-war Liberia should be open and honest, written and verbal, formal, and informal to ensure timely products delivery and reduce project failure.

The business strategy, leadership style, and culture of an organization broadly influence its corporate performance (Leadersphere Inc, 2008). Leadersphere Inc listed key indices representing organizational capability and execution to include structure and adaptability, information technology, measures and rewards, and growth and development. Jiang's position was consistent with Leadersphere Inc that organizational performance outputs could be achieved through employee engagement with leadership, structure, and culture. According to Leadersphere Inc, environmental business influences are managed by an organization's leadership through strategic approaches within operational contexts of capability and execution. Broad determinants of organizational performance operate through key indices by appropriately engaging staff and providing requisite resources to execute tasks effectively (See Leadersphere Inc, 2008). Achieving organizational performance outputs can be challenging if the leadership style does not blend strategic directions with organizational structure and culture to engage staff effectively. Strategies adopted by project managers implementing projects within the post-war environment in Liberia could include strategic employee placements, and provision of requisite resources to facilitate project execution to reduce project failure.

Leadership Quality. The concept of leadership plays a very significant role in issues related to organizational dynamics and PM (Jiang, 2014). Without leadership an organization will operate under highest risk of implementing strategies without focus on performance goals (R. Ahmed et al., 2013). Employees look up to their organization's leadership for direction and guidance to achieve organizational goals. Strong and weak leadership approaches within organizations have telling effects on staff behaviors and organizational performance (Gardiner, 2014; Madu, 2011). Organizational performance improvement strategies include developing and sharing knowledge to increase commitment of employees to participate in organizational learning (Chandrasekar, 2011). Knowledge development and sharing strategies could improve post-war Liberia's PM effectiveness and reduce project failure.

A project manager's leadership style influences project outcomes achievement. According to Wiza and Hlanganipai (2014), leadership roles of project managers influence the organizational commitment of project teams. Jiang was in agreement with Wiza and Hlanganipai (2014) that a positive link exists between managerial styles of project managers and project success. Mohammed et al. (2014) established that autocratic leaders used servant-master approach and dictated to their team members to get things done whereas democratic leaders used consultations with team members and still maintained pivotal authority to get things done. Laissez-faire leaders exerted little or no control over team members to get things done (See Ali, 2016).

A project manager's leadership style must be in conformity with policies, guidelines, rules, procedures, and operational efficiency of the implementing organization

(See S. Ahmed & Abdullahi, 2017; S. R. Khan et al., 2014). Corporate cultures exist in organizations and even though projects may be characteristically different from each other, project managers should anticipate compliance of assigned personnel to the host organization's cultural norms (See Bhatti et al., 2013). Maura et al. (2017) concluded that personal attitudes, skills, and knowledge of project managers have significant effects on project performance, and therefore should be considered differently. Some traits of quality leadership in a project include leadership dynamism, effective communication, team building and management, engaging stakeholders, managing risks and conflicts, time and cost management, political and cultural awareness, effective negotiation and decision-making, and inspiring and coaching the project team (R. Ahmed et al., 2013; Keskes, 2014). To reduce project failure within post-war Liberia, project managers could use different styles of leadership for different project implementation phases.

Project Success. Projects are rated as successful when completed according to scheduled periods, implemented within budgetary expectations, and satisfy stakeholders' anticipations (Ebbesen & Hope, 2013; PMI, 2013a). Chauvet et al. (2010) posited that supervising projects is crucial for success especially in the first years of peace within post-conflict situations. Project success can be described using multiple measures based on the foci of project activities and predetermined deliverables. The PMI (2013b) and Shetach (2010) agreed that success measures common to projects included completion of activities and delivering products according to time schedule, cost projections, meeting required specifications, and satisfying customers' needs. Other common success measures include project completion and delivery of products with minimal changes in

original scope, minimal disturbance of host organization's main work, and maintaining corporate culture of the host organization (PMI, 2013b; Shetach, 2010).

Various dimensions have been postulated for measurement of overall project success. Todorović et al. (2013) suggested four of such dimensions as project management, project products, stakeholder satisfaction, and the cognitive constraint. Project management dimension shows extent to which the project accomplished original objectives as outlined in the project business case, and whether the project met predetermined product specifications within allocated budget, scope, and schedule (Todorović et al., 2013). Product dimension shows extent to which the products met the project charter and business case objectives, achieved the project's key performance indicators measured against established critical success factors, were liked and bought by customers, and were produced at specified costs in compliance with established standards (Todorović et al., 2013). According to Todorović et al., stakeholder satisfaction dimension shows level of satisfaction or dissatisfaction among positive and negative project stakeholders so that successes from positive stakeholder perspective could be used to convert negative stakeholders to positive attitudes, and enable host organizations to become leaders in the product's market. The Cognitive constraint dimension shows influences that cognitive constraints have on successes and end results of a project (Todorović et al., 2013).

Achieving project success is not a guarantee that a host organization is successful in its PM undertakings. In addition, achievement of project success could have long-term effects on the projects and programs implemented by a host organization. To reduce post-

war project failure in Liberia, project managers could engage project teams to focus on project success factors to improve project implementation effectiveness.

The role of the Project Manager

Silvius and Schipper (2014) surmised that a project manager's role is significant in each phase of a project cycle. A project manager's responsibilities include planning and controlling project activities from start to finish, harnessing and managing resources needed to accomplish project goals and objectives, and facilitating post-project reviews to assess the project success rate (See Kissi & Ansah, 2014; Wyngaard et al., 2012). Organizational leaders implementing projects in Liberia's post-war environment could strengthen the project manager's role to manage projects effectively and reduce project failure.

Benefits of effective project management

Todorovié et al. posited that the principal focus of PM is to generate products beneficial to the organization implementing the project and other beneficiaries. Project management involves initiating, planning, and coordinating a variety of tasks to generate anticipated deliverables such as physical products, new software, or a new approach to work (See Too & Weaver, 2014). According to Association for project management website (n.d.), benefits of investing in effective PM to a host organization and those involved in project delivery include greater prospects of generating desired products, ensuring efficient and effective use of resources, and satisfying project stakeholders' needs.

Within contexts such as post-war Liberia, managing projects effectively is necessary to reduce project failure. A projectized organizational structure with dynamic organizational leadership could facilitate post-war project managers' efforts in Liberia to engage project teams to produce anticipated deliverables according to specified time, scope, and budget. A technically competent project team would be invaluable to reduce project failure for an organization implementing projects within Liberia's post-war environment. I conducted my study to investigate strategies project managers working with Liberia's MOE could use to manage projects effectively and reduce project failure.

Knowledge Management

Knowledge management includes practices and procedures providing opportunity to create, capture, share, and use knowledge proficiencies (See Masic et al., 2017; Spangler et al., 2015). According to Girard and Girard (2015), fundamental constituents of a KM framework include knowledge requirement specifications and resources categorization; procedures to identify, acquire, create, or remove knowledge; and procedures to store, retrieve, apply, and disseminate knowledge. The position of Afzal and Afzal (2014) was consistent with Spalek (2014) that KM is the means by which individual or corporate knowledge is spread within a group, community, or organization for direct influence on performance. Applying KM principles in PM is essential for reducing project failure and improving organizational performance (See Sokhanvar et al., 2014). Organizational leaders implementing projects within Liberia's post-war environment could incorporate KM principles with PM strategies to reduce project failure.

Within an organization, KM embodies systematic approaches and tools for storing information and for sharing knowledge (Spangler et al., 2015). Organizations constantly renewing their status and standards customarily deal with multiple knowledge assets that lie within their boundaries and scope. As part of standard practices, organizational leaders integrate knowledge acquired within their organizations through in-house communication and convert it into better-quality products, services, procedures, and mental representations (Sokhanvar et al., 2014). Knowledge integration through effective communication within the post-war environment in Liberia by project managers and their staff could strengthen PM and reduce project failure.

Knowledge Management System

Woodman and Zade (2012) presented information systems that enhance KM processes and demonstrate specific characteristics as KM systems. Characteristics of a KM system include facilitating storage and retrieval of knowledge, enhancing user cooperation, providing access to knowledge sources easily, searching other repositories for more knowledge, and facilitating capture and use of knowledge (See Woodman & Zade, 2012).

The focus of a KM system is to influence performance by increasing efficiency and enhancing competitive advantage (Woodman & Zade, 2012). Examples include: document management systems, decision support systems, database management systems, replication systems, and expert systems (See Saini, 2013). Project managers working within Liberia's post-war context could use KM systems to support knowledge

procedures for timely availability of information to implement projects effectively and reduce project failure.

Knowledge Management System Design. An organization's KM system design comprises interconnected functions based on technology and non-technical processes that facilitate knowledge discovery, capture, dissemination, and utilization to meet specific objectives (See Williams, 2014). Williams mentioned four major practices related to a knowledge management system design: developing or identifying relevant tacit and explicit knowledge by use of previous data, knowledge, or information; capturing tacit knowledge residing in the minds of individuals and explicit knowledge already recorded in multiple documentations, disseminating tacit and explicit knowledge among groups and individuals within the KM system, and using existing knowledge within the system without recreating or relearning that knowledge. An organization can use knowledge utilization processes to continue developing or identifying new tacit and explicit knowledge to feed back into a KM system. A KM system design for projects implemented within Liberia's post-war environment could include processes for capturing tacit and explicit knowledge to address human resource limitations and improve PM effectiveness to reduce project failure.

Knowledge Management Processes

According to Woodman and Zade, sources of knowledge can reside in individuals (Tacit), or stored in a retrieval system (Explicit) for stakeholders within an organization to use. Woodman and Zade's assertions were consistent with the position of Kabir (2013) that groups and organizations characterize knowledge originating from individuals as

corporate and intellectual property. Explicit knowledge represents categorized and packaged information whereas tacit knowledge represents context-specific personal expertise that is challenging to communicate (See Nonaka & Toyama, 2015; Woodman & Zade, 2012). Categorization of knowledge sources could enhance knowledge generation and acquisition for an organizations context-specific PM (see Handzic & Durmic, 2015; Woodman & Zade, 2012). Organizations and corporate entities implementing projects in post-war Liberia could facilitate business processes by categorizing knowledge sources for specific operations to reduce project failure.

Nonaka and Toyama agreed with Kabir that explicit knowledge was well packaged, codified and converted as principles, transferable, and easily expressed in formal and shared language. Examples included formulas, equations, rules, best practices, approaches, methods, procedures, patents, products, and services (See Kabir, 2013). According to Nonaka and Toyama, tacit knowledge was the competence, routines, and intellectual ability that existed within the minds of individuals. The competences and scholarships were characterized by individuals' views, capabilities, intuitions, and expertise. By inference from the Nonaka and Toyama tacit knowledge refers to knowledge that is private to the possessor, context and space specific, not easily validated completely, and challenging to communicate for the same understanding to be established in another individual.

Examples of tacit knowledge within the organizational context included talents and aptitudes, internal and external interactions, employee proficiencies, individual principles and standards, and personal philosophies (See Handzic & Durmic, 2015).

Categorizing and applying Tacit and Explicit knowledge productively for timely availability of requisite knowledge to stakeholders ensures effectiveness of KM programs (Kabir, 2013). As part of post-war PM practices project managers could integrate explicit and tacit knowledge directly or indirectly in principal processes to guide project actions to reduce project failure.

Knowledge Transmission. Nonaka and Takeuchi (1995) posited that knowledge creation or shaping, and transmission within an organization occurred through interfaces between Tacit and Explicit knowledge. The interfaces were knowledge conversion modes namely: Socialization, Externalization, Combination, and Internalization (SECI). Takeuchi (2013) offered a platform for appreciating epistemology and dynamism of knowledge, and provided a structure for KM from ontological perspective. The modes of interaction are delineated as follows (Nonaka & Takeuchi, 1995; Takeuchi, 2013):

- Socialization (Empathizing) represents converting tacit knowledge to tacit knowledge. Knowledge is acquired through direct interactive processes between individuals and groups. The processes include experience sharing, observations, and simulations.
- Externalization (Conceptualizing) represents converting tacit knowledge to explicit knowledge by articulating tacit knowledge harmonized and documented. Tacit knowledge becomes textual and made available to all stakeholders through appropriate means.

- Combination (Modeling) represents converting explicit knowledge to explicit knowledge. More complex and logical sets of explicit knowledge concepts are generated through representation of diverse forms of explicit knowledge.
- Internalization (Practicing) represents converting explicit knowledge to tacit knowledge through practicing and contextualizing explicit knowledge to reflect a history or experience.

Project managers implementing projects within Liberia's post-war environment could use Nonaka and Takeuchi's knowledge conversion modes to improve PM strategies and reduce project failure. Nowacki and Bachnik (2016) concurred with Roberts (2015) that streamlining organizational structures could influence staff' willingness to create and share knowledge to facilitate effective PM for project success. In contrast, Handzic and Durmic surmised that enhancing project processes to reduce project failure involved integrating intellectual capital with KM and PM strategies to develop relationships and to create knowledge among project stakeholders.

Knowledge Management Principles

The capacity of an organization to manage knowledge is reflected in extent to which knowledge resources placed across functional boundaries are created, shared, and utilized (See OuYang, 2015; Young et al., 2010). Gonzalez and Martins (2014) posited that the focus of KM within an organization could be at multiple levels such as department, team, individual, or organizational. I conducted my study to explore KM principles that project managers working within Liberia's post-war context may use to reduce project failure. Knowledge management principles identified in the literature

review included knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization. I discuss the KM principles as follows:

Knowledge creation. Knowledge creation can be described as processes by which an organization develops knowledge resources through functional boundaries (See Gholami et al., 2013; Young et al., 2010). Knowledge creation across functional boundaries is dependent on the organization's ability to produce new knowledge from available knowledge resources (See Mahmoudsalehi et al., 2012). Gonzalez and Martins (2014) established that knowledge creation involved taking advantage of potential resources to be developed into new knowledge and skills. Theriou et al. (2011) surmised that knowledge could be organized for use within contexts where knowledge users would learn and produce new knowledge. Managers must be conscious of leadership style, team atmosphere, cooperative employee community, and social capital circumstances under which knowledge creation and sharing could take place (See Bencsik & Zapletalova, 2015). Project managers implementing projects within contexts such as post-war Liberia could determine whether knowledge creation processes would take place individually or collectively and within or outside the scopes of their projects. Determining locations of knowledge creation processes can enhance post-war PM strategies to reduce project failure in Liberia.

Allameh et al. (2011) surmised that knowledge creation involved impulsive collaborations among individuals and teams within an organization. Staff within organizations jointly identify prospects of relying on each other's knowledge, anticipations, efforts, and to create interactive relationships (See Allameh et al., 2011).

According to Mahmoudsalehi et al. (2012), and OECD (2013) organizational staff create knowledge, interpret, and use it in conformity with their organization's principles, incorporate into operational interactions, and integrate in strategic priorities. Organizational leaders implementing projects within contexts such as post-war Liberia could promote knowledge creation to improve PM strategies by establishing productive collaborations among staff.

Knowledge acquisition. A pertinent way to satisfy an organization's current and future knowledge needs is by adopting a culture of KM to acquire, extract, and share knowledge (Stylianou & Savva, 2016). Techniques used for knowledge acquisition include procurement, observation, process and concept mapping, interviews; and participation in activities such as training, mentoring, coaching, and communities of practice (Young et al., 2010). Gholami et al. posited in concurrence with Young et al. that knowledge acquisition involved obtaining and learning an organization's applicable knowledge from multiple sources including targeted experts, documented experiences, and relevant records. Applying multiple knowledge acquisition approaches from diverse knowledge sources by project managers working in contexts such as post-war Liberia could address knowledge needs to reduce project failure.

Knowledge storage. Knowledge may be stored and retrieved within an organization through multiple storage media such as the human mind, computer applications, and documentations (See Gonzalez & Martins, 2017). Knowledge can be explored and scrutinized within contexts where it is placed to identify possible benefits of its use. Allameh et al. (2011) posited that developing wide-ranging lists of knowledge

products and services involved organizing and refining new knowledge, based on associated benefits. Accessing organizational tacit knowledge is difficult whereas explicit knowledge could be in form of free text, formulas or well-structured manuals and data (Gonzalez & Martins, 2017). In addition, knowledge stored using computer applications can be formal, well structured, well organized, and easily shared among targeted users.

According to Allameh et al., storage of modern knowledge made it accessible to people within organizations by using data saving technologies. Consistent with Allameh et al., Moustaghfir (2012) surmised that integrating data saving technologies and database administration processes by an organization into its global strategic management framework enhanced the ability to manage knowledge resources actively. Integration of knowledge storage processes by project teams working within Liberia's post-war environment could enhance knowledge availability for effective PM to reduce project failure.

Knowledge utilization. Knowledge management capability of an organization includes how the organization applies shared knowledge resources across functional boundaries and provides a framework for securing returns realized from the knowledge resources (Mahmoudsalehi et al., 2012). Furtherance to Mahmoudsalehi et al.'s assertion Pension et al. (2013) posited that an organization could possess the capability to create and share knowledge resources but the capability would not be relevant if the organization could not utilize knowledge resources ingeniously. Ability to utilize knowledge resources and make decisions to solve problems enables an organization to respond better to changes occurring in its business environment (Theriou et al., 2011). A

positive impact is engendered within functional structures and knowledge integration mechanisms when an organization uses knowledge resources ingeniously to address problems (See Ahern et al., 2014; Gonzalez & Martins, 2014; Wang & Lin, 2013). Knowledge utilization processes by project teams working within contexts such as post-war Liberia could involve analyzing and critically assessing ideas, plans, and types of knowledge to improve PM efforts toward reducing project failure.

Pension et al. (2013) argued that sharing of knowledge resources could take place within an organization in an efficient and suitable manner to meet specific needs across functional boundaries. Within the post-war context, an approach to share knowledge resources could be to translate the knowledge resources to become comprehensible for project teams to use to enhance PM strategies and reduce project failure. In addition to facilitating cross-functional interaction within an organization, Handzic and Durmic (2015) indicated that allocating knowledge resources expedited sharing of knowledge warehouses among knowledge process teams. According to Felipe et al. (2017), an organization's ability to share and distribute knowledge resources internally influenced the ability to change its business procedures. Sharing and distributing knowledge resources by organizational leaders implementing projects within contexts such as post-war Liberia could allow for greater collaboration and understanding of knowledge utilization among project teams to reduce project failure.

Verle et al. (2014) agreed with Leal-Rodríguez et al. (2013) that in a typical organizational environment, cultural expectations influenced knowledge-sharing practices based on knowledge available and knowledge kept by individuals. From a

different perspective, Takeuchi (2013) posited that operational interactions within an organization determined how quickly knowledge could flow through reporting hierarchies for strategic prioritization, and how the organization focused on knowledge details. Creating and sharing knowledge, as compared to other assets or resources, determine the value of technologically driven organizations (Felipe et al., 2017).

Summary and Conclusions

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce post-war project failure rates. I conducted the research to explore how to apply the RBV and the KBV to management strategies and KM principles to reduce post-war project failure rates by project managers. My investigation related in particular to international organizations implementing projects within the education sector of Liberia's post-war contexts. Inferences drawn from the literature review indicated that organizations applied RBV and KBV principles to strategize and effectively manage resources to maintain sustainable competitive advantage on the market (See Penrose, 1959, as cited in Truijens, 2003; Ting, 2012; Wernerfelt, 1984).

From my review of the literature, a strong need for investigating management strategies and KM principles that project managers could use to reduce project failure rates within the Liberia's post-war context was uncovered. Lack of studies on the relationships between management strategies, KM principles, and PM effectiveness for projects implemented in post-war Liberia and thorough discussions on key themes of my study confirmed the gap in literature and its ramifications for future research. Through

the literature review, I observed that internal organizational factors such as project planning, communication, and information management affected project failure. The qualitative case study design involving an expert panel of project managers working for international organizations operating in post-war Liberia was used for this study. Specifically, the Delphi technique was employed to solicit responses to the research questions. Details of the research design and methodology are discussed in chapter three.

Chapter 3: Research Method

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. Using the Delphi technique, I determined consensus opinions of expert project managers who had worked in the education sector of post-war Liberia from 2012 to 2020. Chapter 3 presents the research design and rationale, role of the researcher, research participants and sampling, instrumentation and data collection, and data analysis and interpretation. I also discuss validity, reliability, trustworthiness, and drawing inferences. Chapter 3 concludes with a summary.

The purposeful international sample consisted of 20 project managers who had worked in Liberia's post-war environment for at least 2 years, had worked as project managers for at least 2 years, and were working for an organization affiliated with the Liberia MOE at the time of the study. I selected four of the project managers who had highest qualifications and the highest number of years working in the post-war context to participate in Skype focus group discussions and the remaining 16 to participate as expert panel members. Self-administered questionnaires were used for the interview process via email. Participants provided their perceptions of managememt strategies and KM principles that project managers can use to reduce post-war project failure. Member checking was used to ensure that participants' responses had been precisely captured.

Research Design and Rationale

I used the case study design with the Delphi technique to explore the perceptions of project managers regarding applicable management strategies and KM principles that can be used to reduce post-war project failure. The Delphi technique includes expert panel members anonymous to each other building consensus on issues that have limited knowledge support or that have insufficient literature to support their use for decision-making (Dalkey, 1969; Meshkat et al., 2014). The research questions for this study were the following:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

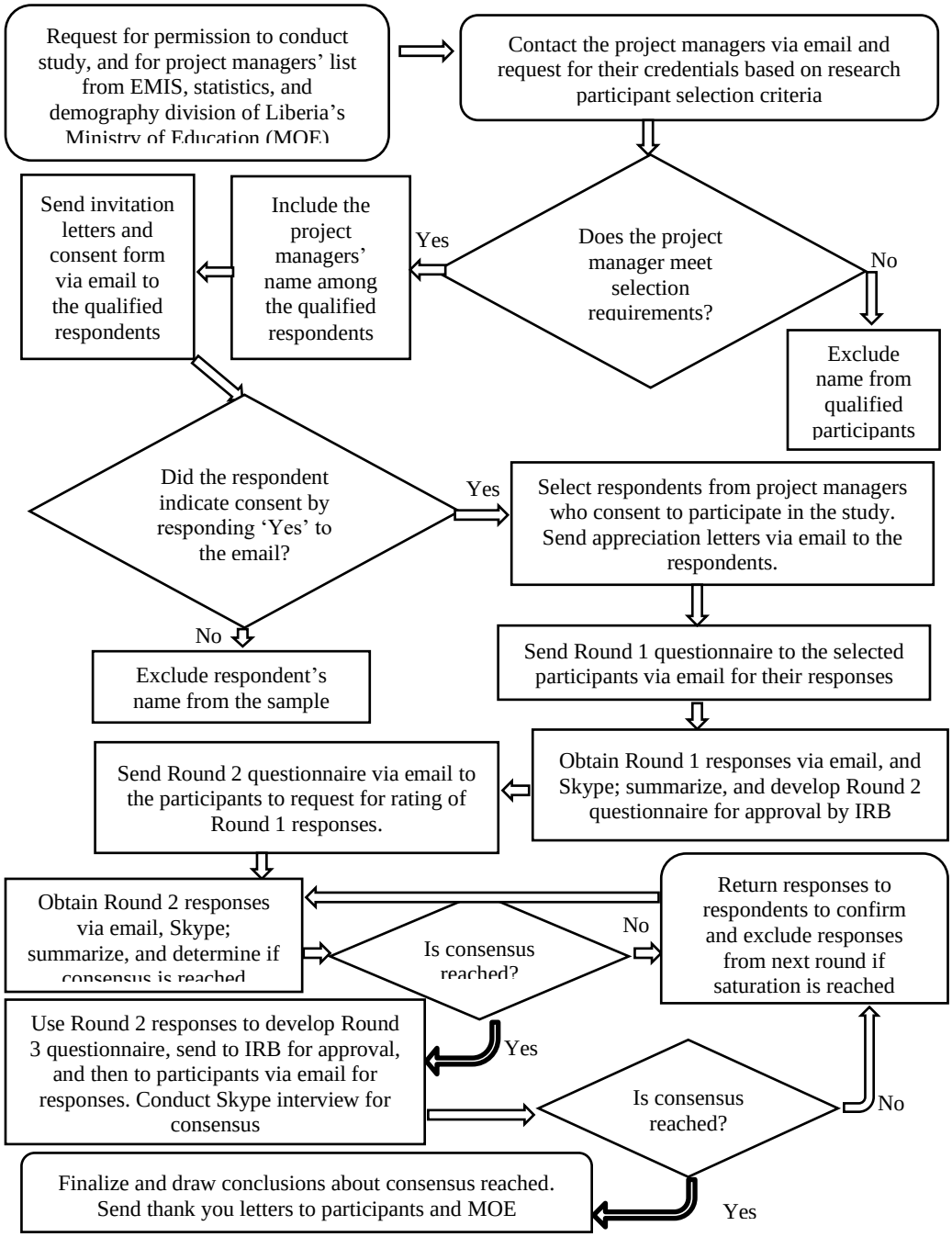
RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management resources that may be suitable for reducing project failure rates?

The qualitative case study design and the Delphi technique used for this study included three rounds of surveys with the same respondents, and each round included a two-step process (See Kalaian & Kasim, 2012). As shown in Figure 1, I sought permission from the Research, Education Management Information System (EMIS), Statistics, and Demographics division of Liberia's MOE to engage its registered project managers in my study. The initial list of 25 project managers provided by the MOE was found to be outdated (2012) because some of the addresses given no longer existed, and some project managers responded that they had left Liberia to work in other countries. This confirmed the position of LISGIS (2011) that a major limitation of the Government of Liberia and its development partners is weakness in compiling and disseminating data to measure and articulate impacts of projects. A more recent list (2015) was provided that included 75 education sector cluster organizations working in Liberia. The organizations were registered with Liberia's MFDP as affiliates with the MOE. That, according to the National policy on non-governmental organizations in Liberia (2008), was the requirement for international organizations working within each sector in Liberia to be affiliated with the respective parent ministries.

Figure 1

Visual of Qualitative Case Study Process Using Delphi Technique



Note. Adapted from "Terminating sequential Delphi survey data collection," by S. Kalaian, and R. K. Kasim, 2012, *Practical Assessment, Research and Evaluation*, *17*(5).

The education sector cluster organizations employed 218 PM team members with some of them working directly with the MOE and others as affiliates to the MOE. To be included in the selection process for my study a project manager must have been working for a project implemented by an organization under the supervision of Liberia's MOE through the MFDP during the period of the study. I collected data from expert project managers working for projects within the education sector. Expert project managers were selected purposefully from project managers residing in various locations within Liberia, West Africa. Some of the participants worked with organizations implementing education sector projects in one or more of the 15 counties within Liberia whereas others worked with projects that covered all counties in Liberia. For administrative purposes the projects' headquarters were located in Monrovia and their operations took place throughout Liberia. Therefore participants shared experiences gathered from the whole country. According to Google Maps (2017), the distance between Accra in Ghana (my location) and Monrovia, the capital of Liberia, is 1,173.17 kilometers or 728.98 miles.

Table 1 shows the distances between Monrovia and the 15 counties in Liberia. I emailed education sector project managers who qualified according to my selection criteria. A letter of consent was included in the introductory letter that was sent to the qualified project managers. Twenty respondents from the education sector PM team who indicated willingness to participate in the study were selected as participants. Four participants who had experienced highest numbers of years working within Liberia's post-war environment, and had the highest academic credentials were selected for focus

group interviews, and the remaining 16 as expert panel members. According to B. Marshall et al. (2013), a single case study normally includes 15 to 30 interviews.

Table 1

Distances Between Monrovia and the Counties in Liberia

	County	Distance	Mileage
1	Sinoe	253 km	157 miles
2	Nimba	244 km	152 miles
3	Montserrado	41 km	25 miles
4	Maryland	381 km	237 miles
5	Lofa	241 km	150 miles
6	Grand Gedeh	288 km	179 miles
7	Grand Cape Mount	88 km	55 miles
8	Grand Bassa	109 km	68 miles
9	Bong	169 km	105 miles
10	Bomi	51 km	32 miles
11	Grand Kru	332 km	206 miles
12	Margibi	59 km	37 miles
13	River Cess	155 km	96 miles
14	Gbarpolu	155 km	96 miles
15	River Gee	344 km	214 miles

Note. Google Maps. (2017). *Google Maps*. [online] https://www.google.com.au/maps/@-23.3394728,150.5201386,12z?hl=en [Accessed December 21, 2017].

Even though researchers had recommended a relatively small sample for a Delphi panel, my rationale for selecting 20 project managers working with the MOE was to accommodate possible nonresponse and participant dropouts from the study (See Balasubramanian & Agarwal, 2012; Linstone & Turoff, 2002). The selection of a relatively large sample was based on previous Delphi studies in which similar sample sizes were used to achieve the study goals. I emailed Round 1 questionnaire to the selected participants to solicit their responses. The responses obtained were summarized into thematic categories and presented to the participants to confirm their initial responses.

The process of reviewing responses provided by expert project managers through the second and third-rounds determined consensus for desirability and feasibility, and for importance and confidence of the themes as strategies to reduce post-war project failure. For my study, the consensus criteria were a mode of at least 4, a median of at least 4, and at least three quarters of participants rating 4 or 5 for each theme on a 5-point Likert-type scale (Bzowyckyj & Janke, 2013; Kocherla, 2012). According to Fusch and Ness (2015), "data saturation is reached when there is enough information to replicate the study, when the ability to obtain additional new information has been attained, and when further coding is no longer feasible." p.3. In a case study with a small sample, triangulation of responses using different sources, and employing member checking for responses to the same questions can facilitate reaching data saturation. I terminated the Delphi survey and drew conclusions based on the results obtained by reaching consensus and data saturation.

Qualitative Research

Qualitative research methods support formulation of themes to contribute to establishment or further investigation of a theory to validate its claims (Yin, 2011). It focuses on maximizing the use of information from small samples and single cases selected on the basis of required information provided (Bendassolli, 2013). Yin (2011) presented five of the commonly used qualitative research approaches as narrative, case study, phenomenology, grounded theory, and ethnography. Each qualitative approach is suitable for specific problems and characteristics including geographical locations (See Baškarada, 2014). I discuss briefly, the case study approach as a premise to the justification of my selected approach for this study.

Case Study

A case study can be considered as descriptive, exploratory or explanatory investigation of a person, event, group, period, policy, project, institution, or system that is studied holistically using one method or a combination of methods (Cibangu, 2013; Yin, 2009). The investigation can be prospective or focused retrospectively, and can be based on a combination of qualitative and quantitative evidences (See Yin, 2009). A case study is employed to comprehend a phenomenon to any level of thoroughness; and to know how widespread the phenomenon is (Tsang, 2013). According to Yin (2009), a case study research design has five main components namely research question(s), propositions, unit(s) of analysis, logical linkages between data and propositions, and criteria for interpreting research findings.

The case is described as a bounded system that defines the subject of investigation and provides the context for conducting the study (Poulis et al., 2013; Yin, 2009). Baškarada (2014) agreed with Yin (2009) that the case study design is best suited for providing in-depth understanding of cases about an event, a program, or an activity related to more than one individual within a setting or context. Exploratory, descriptive, and explanatory case studies are described as follows:

Exploratory case study is used to investigate situations under which an intervention assessed does not have clear outcomes (Yin, 2009). According to Baškarada, researchers generally use the exploratory case study as initial research to develop data models by identifying patterns for observing data obtained through the case study. Data are collected, analyzed, and interpreted based on specific criteria. For exploratory case study, the inquiry is structured to focus on what questions (Yin, 2009).

Descriptive case study is used to obtain further information about characteristics of an issue under investigation, and requires a theory to determine the direction for data collection (Yin, 2009). The focus of descriptive case study research questions is on effects of an intervention (See Kalu & Bwalya, 2017). Explanatory case study is used to explore relationships in interventions that are intricate for surveys and experimental approaches (Yin, 2009). Baškarada posited that researchers use the explanatory case study for examining or clarifying reasons why some things occur in nature. Research questions for explanatory case study are generally how or why types (O'Brien et al., 2014). Project evaluators can use explanations obtainable from explanatory case study to link project implementation activities with project effects (Yin, 2009).

Justification for Selecting the Case Study Approach

The case study approach was suitable for my study which focused on using consensus opinions of an expert panel to determine what management strategies and KM principles project managers can use to reduce post-war project failure. It was an initial research, and the data would contribute to literature about strategies that project managers could employ within Liberia's post-war environment to reduce project failure rates. Investigating the depth and breadth of a phenomenon includes application of descriptive analyses (Vallor et al., 2016). Aggregation of responses occurs through analysis of ratings often generated by Likert scale to determine the respondents' preferences for items in the survey. I used qualitative descriptive measures of central tendency to complement the results obtained through the case study approach.

Delphi Technique

The Delphi technique was originally created by the Research and Development Corporation (RAND) in the 1950s to resolve issues related to the military's future technology prospects and consequential political implications associated with it (Avella, 2016; Brady, 2015). It is still in use by RAND and is precisely to build accurate expert consensus through elimination of conference room inhibitions. According to Kalaian and Kasim (2012), the Delphi technique was popularly used for forecasting. Multiple studies have validated the long-term precision of results obtained through the Delphi technique to advance consensus conclusions in prediction studies (See Von der Gracht, 2012). The Delphi technique has been used to emphasize variations in opinion toward developing alternative future scenarios of issues within organizations (Von der Gracht, 2012). Using

the Delphi technique involves thoughtfully designing a set of questionnaires based on literature to solicit and collate judgments about a topic. It is grounded on rounds of structural surveys using intuitive information from a carefully selected expert panel of participants based on their knowledge, experience, and competency in the topic under investigation (Kalaian & Kasim, 2012).

Balasubramanian and Agarwal (2012) posited that primary use of the Delphi technique is to assess long-term issues and to facilitate translation of tacit and multifaceted knowledge into distinct statements to draw conclusions. The Delphi approach has over the years been focused on issues about which resolute and adequate knowledge do not exist, and for which judgments are made with unsure aspects (Balasubramanian & Agarwal, 2012). The approach is consistent with the purpose of this study in which I used predictions by project managers to build consensus on management strategies and KM principles that project managers could use to reduce post-war project failure rates in Liberia.

According to Linstone and Turoff (2002), determining management strategies that project managers can use to improve PM measures by using the consensus opinions of experts falls within the scope of issues investigated with the Delphi technique. In this study, I emailed self-administered questionnaires to the expert panel members to obtain their perceptions and to determine consensus about management strategies and KM principles that project managers can use to reduce post-war project failure rates. Results generated from each Delphi survey round were used as input to the questionnaire development for the next round.

Justification for Selecting the Delphi Technique with Likert Scale

Motivation to select the Delphi technique for my study was its use of expert panel members anonymous to each other to build consensus on issues that have limited adequacy of knowledge support (See Avella, 2016; Brady, 2015). In addition, the Delphi technique is used to investigate issues that have insufficient literature to support their use for decision-making (Dalkey, 1969; Meshkat et al., 2014). Use of Likert-type scale for Delphi survey in a qualitative study is effective to reach informed consensus among a panel of experts on an issue under investigation (See Habibi et al., 2014; Linstone & Turoff, 2002; Von der Gracht, 2012).

Key steps to conduct a qualitative study using Delphi technique with a Likert-type scale indicated by Dalkey, Yarmohammadiyan et al. (2015), and Balasubramanian and Agarwal (2012) are outlined as follows:

- Step 1: For the first-round Delphi survey, expert panel members anonymously respond to open-ended questions focused on the issue under investigation. In addition, each expert panel member is given a chance to suggest alternative responses to be included in the study.
- Step 2: The researcher reviews open-ended survey responses obtained from Round 1 and categorizes according to themes and patterns identified. The themes and patterns are presented to the focus group interview members for review and concurrence or otherwise. The categories obtained from the focus group interview discussion are used to create a list of structured Likert-type closed-ended questionnaire items for the second-round Delphi survey.

- Step 3: The expert panel is presented with a Likert-type closed-ended questionnaire for a second-round Delphi survey to provide ratings on the categories of Likert-type scales created. The expert panel is given an opportunity to recommend changes to the survey questions and suggest applicable new questions. Additionally, the Round 2 Delphi survey involves presenting each expert panelist with anonymous aggregated summary of responses obtained from Round 1. The aggregation is presented in forms such as summary data and graphical representations. Expert panel members are invited to confirm their responses for Round 1 based on the summary of collective responses obtained from Round 1.
- Step 4: The researcher analyzes survey responses from Round 2 and provides a report about the experts' agreement and consensus, or otherwise, based on predetermined consensus criteria. The report should include a summary of ratings provided by expert panelists on the Likert-type scale questions, and displayed using descriptive measures namely mode, and median. If agreement or consensus is not realized among the expert panelists according to the predetermined consensus criteria, a third-round Delphi survey is conducted. The themes and ratings are presented to the focus group interview members for review and concurrence or otherwise. The categories obtained from the focus group interview discussion are used to create a list of structured Likert-type closed-ended questionnaire for Round 3.

- Step 5: For Round 3, the expert panelists are presented with a revised Likert-type closed-ended questionnaire accompanied by a summary of Round 2 responses for confirmation or re-rating of their responses. If consensus is not reached, subsequent rounds of Delphi survey are conducted until consensus or data saturation is reached. According to Fusch and Ness (2015), data saturation occurs when enough information is obtained to replicate a study and the ability to obtain additional new information is reached with no further coding feasible. The Delphi survey is terminated and conclusions are drawn based on the results obtained through consensus or data saturation.

For each round of my qualitative study, the summaries of themes provided by the expert panel members were presented to the focus group interview participants and discussed via Skype to determine their concurrence or otherwise. I gave the focus group interview participants opportunity to suggest other themes considered important to be included in the study. Data saturation was reached when information provided by the focus group interview members was enough to be used to replicate the study, and there were no further responses to be used to develop new themes (See Fusch & Ness, 2015). The themes for which there was agreement by the focus group Skype interview participants were used to develop questionnaires for the second and third-rounds of the Delphi survey.

Examples of previous qualitative studies that used the Delphi technique with a Likert-type scales to reach consensus are: Joyner and Smith (2015), Kim and Aktan (2014), Klemenc-Ketis and Vrecko (2014), Maddock, et al. (2017), Phillips et al. (2014),

and Robert et al. (2014). Examples of previous qualitative Dissertations that used Delphi technique with a Likert-type scale questionnaire are as follows: Kocherla (2012) conducted a qualitative exploratory case study on "Evaluating managerial styles for system development life cycle stages to ensure software project success." Using the Delphi technique and a 5-point Likert scale to solicit the rankings of 18 expert project managers, Kocherla obtained consensus ratings from expert project managers during the third-round Delphi survey.

Lyons (2013) conducted a qualitative study using the Delphi technique to obtain opinions of 19 teaching experts on what teachers needed to know about pediatric bipolar disorder. The teaching experts were selected from the fields of education and medicine. Lyons used a 4-point Likert-type scale to reach consensus during the third-round Delphi survey from the teaching experts. Gualtier (2015) conducted a qualitative study using the Delphi technique and a Snowball sample of 18 experts. The purpose of the study was to investigate the then standing of cyber warfare under international law and to make recommendations for changes to the law as needed. Gualtier used a 7-point Likert type scale to reach consensus after three rounds of Delphi surveys. The expert panel members were selected based on their expertise in international law and cyber warfare.

The feasibility of using KM principles to improve PM effectiveness has received very few citations (See Wang & Lin, 2013). The consensus reached on management strategies and KM principles that project managers could use to reduce post-war project failure rates in Liberia would contribute to existing literature on post-war PM strategies. My study was consistent with Bendassolli (2013) and Popper (1959/2002) that the choice

of Delphi technique with the case study approach compensates for limitations of objectivity and subjectivity of scientific theories.

Role of the Researcher

My role in this research was to observe and moderate the response processes of each round for the expert panel to submit their responses on timely basis. To manage the biases, I considered myself to be in a neutral position where the participants' responses were not predictable. My interactions with the participants were not the basis for interpreting their responses. I endeavored not to distinguish participants and their responses by their race, gender, ethnic group, nationality, or religious affiliation.

I used protocols, questionnaires, and multiple sources for data collection to minimize biases. According to Yin (2009), and Baškarada (2014), the use of multiple sources to obtain data on the same subject under investigation minimizes biases. Research findings included a summary of interview responses and representations of consensus opinions expressed by participants. My role ensured that each expert panel member's meanings attached to responses were not replaced with my own interpretation, participants' names were omitted to ensure anonymity, and participants signed electronically to provide authorization to use their responses for the study. I made participants were aware of the right to review their responses and to request for clarity where necessary. A summary of findings will be disseminated via email with letters of appreciation to participants and their organizations. A copy of the dissertation will be made available to participants and organizations that request a copy.

Methodology

Participant Selection Logic

The participants for this study comprised a purposeful international sample of 20 education sector project managers from international organizations that operated within Liberia and were working with Liberia's MOE. Four of the selected participants who had experienced the highest numbers of years working within Liberia's post-war environment, and the highest academic credentials were selected for focus group interviews and the remaining 16 as expert panel members. I sought authorization from the Research, EMIS, Statistics, and Demographics division of Liberia's MOE to conduct desk reviews and interviews with the project managers identified. The authorization included an agreement to follow ethical standards of the MOE pertaining to non-interference with the project managers' activities, confidentiality, and information disclosure. A written consent to participate in the interviews was signed electronically by the project managers who volunteered their time and information. According to Yin (2011), signing a written consent by research participants signified their understanding of the nature and purpose of the study.

Participants were asked questions that provided opportunity to share their experiences in managing projects within the post-war context. They were requested to indicate opinions about management strategies and KM principles that project managers can use to reduce project failure rates. Anonymity and confidentiality of responses were assured and maintained. Copies of the response summaries were sent to the participants for confirmation of their responses. My selection criteria for expert panel members from

projects working with the MOE included previous work in post-war Liberia and/or other post-war contexts for at least 2 years; previous work as a project manager for at least 2 years, having at least bachelor's degree or equivalent, working for an education sector organization registered with Liberia's MOE at the time of the study, willingness to participate in the research; and being of any ethnicity and any age. In addition, selection criteria for the four focus group interview members included having the highest numbers of years of experience working within Liberia's post-war environment, and highest academic credentials among the 20 project managers.

Some limitations of the Delphi technique include sample size determination and selection challenges, participant dropouts after repeated rounds of the survey, and variations in consensus declaration criteria (See Avella, 2016). According to B. Marshall et al. (2013), a single case study normally includes 15 to 30 interviews. Even though researchers had recommended a relatively small sample for a Delphi panel, my rationale for selecting 20 education project managers working with the MOE was to accommodate possible nonresponse and participant dropouts from the study (See Balasubramanian & Agarwal, 2012; Linstone & Turoff, 2002). The selection of a relatively large sample was based on previous Delphi studies in which similar sample sizes were used to achieve the study goals. Participants partook in three rounds consensus-building sessions via the Internet.

Instrumentation

The research questions were basis for creating an open-ended questionnaire for Round 1 (See Linstone & Turoff, 2002; Vallor et al., 2016). The open-ended questionnaire (See Appendix A) for Round 1 requested for opinions about management strategies and KM principles that project managers can use to reduce post-war project failure rates. The research questions for this study were the following:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

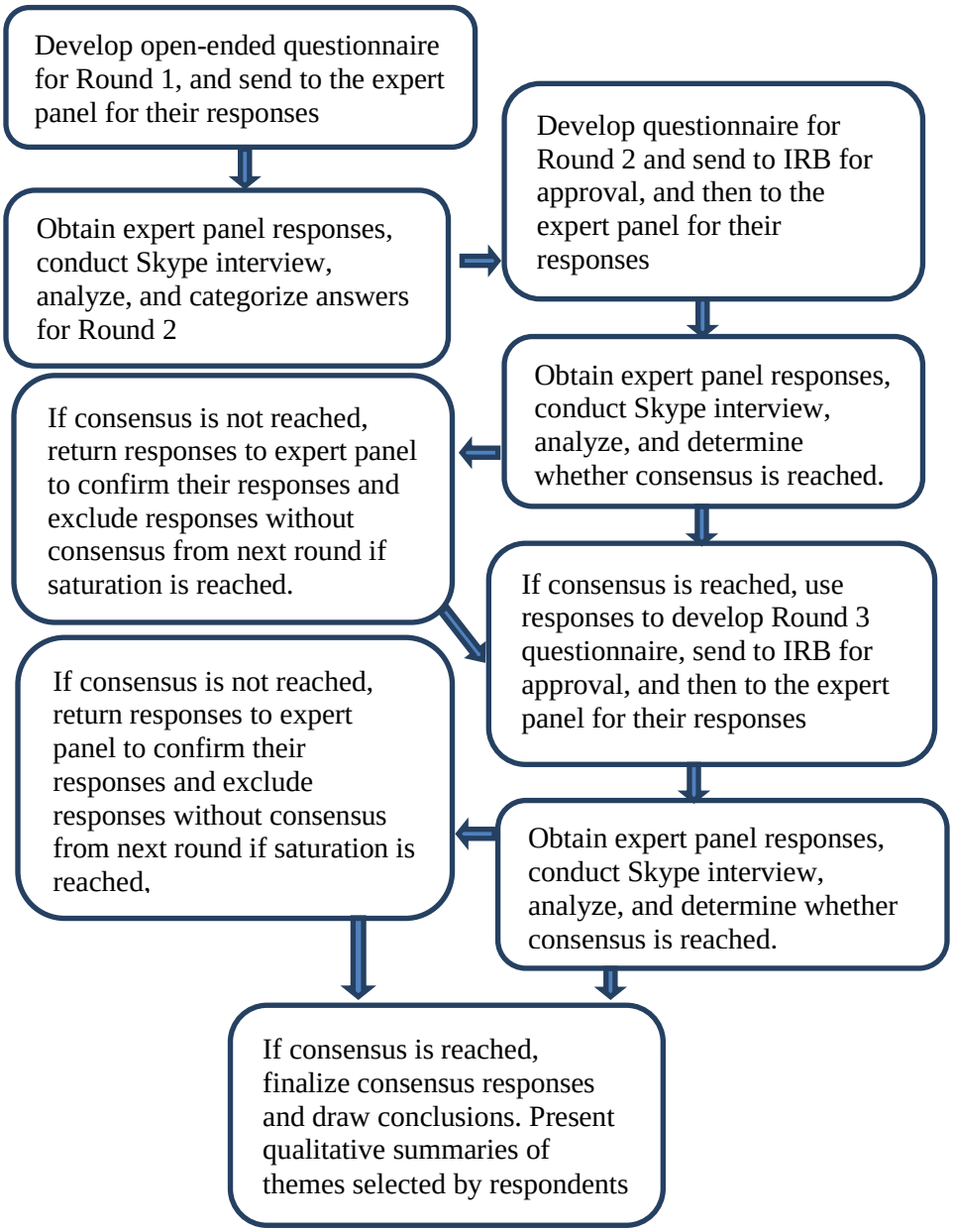
RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management resources that may be suitable for reducing project failure rates?

Responses obtained were categorized into themes and used for rounds of the Delphi survey as outlined in Figure 2. Responses obtained from preceding Delphi survey rounds formed the basis for developing questions for successive rounds (See Yousuf, 2007). Responses from the second and succeeding rounds were analyzed using qualitative descriptive measures of central tendency namely mode, and median (See Green & Salkind, 2011; Subedi, 2016; Toma & Picioreanu, 2016). The questions were rated using a 5-point nominal Likert-type scale, where 5 = strongly agree, 4 = agree, 3 = uncertain, 2 = disagree, and 1 = strongly disagree. Habibi et al. (2014) posited that a qualitative research with the purpose of determining the importance or screening of items can use the Likert scale to gather expert ratings on the subject of investigation.

The first-round Delphi survey involved distributing an open-ended questionnaire (See Appendix A) via email to expert project managers to provide responses to questions about what management strategies and KM principles that project managers can use to reduce post-war project failure rates. I analyzed and categorized the responses obtained into themes for development of Round 2 questionnaire. Appendix A includes the protocol for Round 1. The themes together with the number of respondents per theme were emailed to the expert panel project managers to confirm their responses based on summarized ratings from all the expert panel members.

Figure 2

Methodology Diagram for Delphi Design



Note. Adapted from "Delphi Method - A Review," By R. Balasubramanian and D. Agarwal, 2012, International Journal of Public Health Dentistry," 3(2), 16-25; And "Using Experts' Opinions Through Delphi Method," By Yousuf, 2007, Practical Assessment Research and Evaluation, 12(4).

The project manager expert panel members were requested to provide additional responses they wished to include in the summarized response categories. I used themes based on the confirmed responses to develop the questionnaire for Round 2 Delphi survey. The Round 2 questionnaire was a collective list of summarized responses into themes on each question from the first-round, and categorized on a 5-point nominal Likert-type scale, where 5 = strongly agree, 4 = agree, 3 = uncertain, 2 = disagree, and 1 = strongly disagree. I emailed the questionnaire to the expert panel members to rate each theme using the Likert-type scale on whether the theme was desirable and whether the theme was feasible to reduce post-war project failure. Responses were analyzed using qualitative descriptive measures of central tendency (mode, and median), and used as evidence to begin consensus-building of the expert project managers' opinions. I returned the ratings and summarized responses from Round 2 to the expert panel project managers via email to confirm their responses based on summarized ratings from all the expert panel members. The protocol for Round 2 is included in appendix B.

Consistency of the Likert scale ratings with consensus criteria during the Delphi survey and agreement by expert panel members were used to determine consensus of participants' responses. Participants included 20 expert project managers working with Liberia's MOE. The analyzed Likert-scale ratings in the form of mode, median and the number of responses for each theme were used as evidence to begin consensus-building of the expert project managers' opinions (See Giannarou & Zervas, 2014). For my study, the consensus criteria were a mode of at least 4, a median of at least 4, and at least three quarters of participants rating 4 or 5 for each theme on a 5-point Likert-type scale (See

Bzowyckyj & Janke, 2013; Kocherla, 2012). Themes for which responses from expert panel members met the consensus criteria during Round 2 were classified as desirable and feasible, and included in the questionnaire for Round 3. Themes for which the consensus criteria were not met during Round 2 were not included in the questionnaire for Round 3.

I summarized the themes using tables and charts, and sent to the expert panel of project managers to confirm or revise their ratings. After discussing the confirmed themes with the focus group members via Skype, I requested the expert panel members to indicate whether the themes were important and whether they had confidence in using the themes as strategies to reduce project failure. The Round 3 questionnaire was a collective list of summarized responses on each question from the second-round and arranged on a 5-point Likert-type scale. Responses from the third-round were analyzed using qualitative descriptive measures of central tendency namely mode, and median (See Green & Salkind, 2011; Subedi, 2016; Toma & Picioreanu, 2016). The expert panel members' participation in Round 3 of the Delphi survey included appraising and confirming their Likert scale ratings on importance and confidence. Consistency of the Likert scale ratings with the consensus criteria and agreement by panel members determined participants' perceptions of management strategies and KM principles that project managers can use to reduce project failure rates.

Procedures for Recruitment, Participation, and Data Collection

As shown in Figure 1, I commenced the Delphi approach with assembly of names of expert project managers who would be panel members. The assembly of experts' names was followed-on with development of the survey questionnaire for Round 1 which was emailed to the expert project manager panel members for their responses. I analyzed the expert panel members' responses from the first-round using NVivo software application. Responses obtained from Round 1 were collated, summarized into themes, and used to develop the questionnaire for Round 2.

The questionnaire for Round 2 was emailed to the project manager expert panel for their second-round of responses. I analyzed the expert panel members' responses from the second-round using SPSS software application. Results were presented using qualitative descriptive measures of central tendency namely median and mode. The themes for which consensus was built were used to develop Round 3 questionnaire and emailed to expert project manager panel members for a third-round of responses. Responses obtained from the third-round were analyzed using SPSS software application and results presented using qualitative descriptive measures of central tendency namely median and mode. Inferences were drawn from comments and ratings through cross-reference analysis to determine expert panel members' predictions about management strategies and KM principles that project managers can use to reduce post-war project failure rates.

Data Analysis

Analysis of Round 1 Responses

The initial research questions that guided the study were the following: “What are the perceptions of education sector project managers working with Liberia’s MOE about strategies to implement to reduce project failure rates?” and “What are the perceptions of education sector project managers working with Liberia’s MOE about KM principles that may be suitable for reducing project failure?” To address the research questions, open-ended questions were used to collect information about relationships that exist between management strategies, KM principles, and project failure as identified by the expert project managers. Thematic and content analyses were used to analyze the responses to categorize management strategies and KM principles recommended by the expert project managers.

Responses to open-ended questions were read and repeatedly analyzed to obtain systematic comparisons. I undertook initial hand-coding and categorization of the qualitative responses into themes. For each research question, the study generated the following themes:

Question 1: What competency challenges do education sector project managers working with Liberia’s MOE face in reducing project failure?

1. Limited organizational skills.
2. Limited technical capability.
3. Weak leadership quality.
4. Poor project implementation strategies.

5. Unsatisfactory financial management practices.

Question 2: How can education sector project managers working with Liberia's MOE overcome the competency challenges and reduce project failure?

1. Strengthen technical capacities of project teams.
2. Strengthen organizational structures.
3. Improve project planning, implementation, monitoring, and evaluation.
4. Ensure adequate allocation of funds for project activities.

Question 3: What resources would you recommend organizations to employ in education-sector projects in Liberia to enable project managers reduce project failure?

1. Qualified and competent staff.
2. Adequate logistics.
3. Adequate project funding.
4. Shared knowledge from previous projects.

Question 4: How may the resources provided to education sector project managers be used to reduce project failure?

1. Ensure financial compliance and accountability.
2. Ensure effective and efficient project implementation, monitoring, and evaluation.
3. Use resources to develop capacity of project staff.
4. Ensure effective donor-partner coordination.

Question 5: What support would you recommend the MOE to provide to enable organizations implementing education sector projects in Liberia to reduce project failure?

1. Enforce standards and compliance.
2. Strengthen overall project monitoring system.
3. Develop technical capacities of staff.
4. Share knowledge and key documentation with projects.

Question 6: What knowledge management competences would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?

1. Effective communication skills.
2. Knowledge creation skills.
3. Knowledge-sharing skills.
4. Knowledge acquisition skills.
5. Knowledge utilization skills.
6. Sector-specific technical knowledge.

Question 7: How may education sector project managers working with Liberia's MOE use the knowledge management competences to reduce project failure?

1. Communicate project goals, objectives, and resources needed to accomplish objectives.
2. Network and collaborate with project stakeholders to review project progress.
3. Ensure that project tasks are completed by project teams.
4. Develop internal technical capacity.

5. Appropriately delegate responsibilities to local staff.

Question 8: What resources for knowledge management would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?

1. Data management system.
2. Periodic project review system.
3. Adequate Logistics.
4. Capacity development system.
5. Documented lessons from projects.
6. Qualified and competent staff.
7. Strong network of stakeholders.

Question 9: How may education sector project managers working with Liberia's MOE use the knowledge management resources to reduce project failure?

1. Organize project team members to implement project effectively.
2. Regularly conduct project performance reviews.
3. Establish user-friendly KM system that is accessible to all employees.

The themes enabled me to observe patterns in expert panel members' responses about management strategies and KM principles that project managers can use to reduce post-war project failure rates. The first reading was used to gain overall logic of the experts' suggestions about themes considered to be management strategies and KM principles that I should include the study. The second reading was directed toward highlighting key phrases and words in responses that epitomized the experts' opinions.

After highlighting keywords and phrases, I wrote brief notes to cluster the responses for a concise summary. Subsequent readings and analyses were focused on the notes and summarized ideas to categorize distinct sections of the data by organizing, linking, and classifying discrete concepts. I used constant comparison analysis to identify themes along with data patterns by searching for similarities and differences through systematic comparisons as recommended in literature by Ponelis (2015). The themes identified were structured to engender a spectrum of impressions from qualitative responses provided by the expert panel. A final reading was used to finalize the themes in relation to results from quantitative analyses.

Aggregation of coded responses under each category of themes gave an indication of the perceptions of management strategies and KM principles that should be included in the investigation. I applied member checking as recommended in literature by Brady (2015), and peer review in the coding process through interactions with the expert panel to ensure validity of information collected. The coded responses were transcribed into Microsoft Word, imported into NVivo software, and organized into tree nodes for further analysis (QSR International, 2014). Use of NVivo software technology for qualitative analysis ensured consistency in my data management procedure and increased speed of the analysis process.

Analysis of Round 2 Responses

The question for Round 2 was: Please indicate your ratings for each summarized response category from Round 1 on whether the thematic categories listed are desirable and feasible to reduce post-war project failure, and indicate additional response

categories you may wish to be included in the study. To address this question, expert panel members reviewed the summarized response categories and provided appropriate ratings based on their perceptions. The ratings were provided on a 5-point nominal Likert-type scale, where 5 = strongly agree, 4 = agree, 3 = uncertain, 2 = disagree, and 1 = strongly disagree (See Habibi et al., 2014). I entered results from the project manager expert panels' nominal Likert scale ratings into SPSS software for analysis. For each question, an aggregate of Likert scale rating categories selected by the expert panel was determined. Descriptive data were used to display analyzed response ratings obtained from the project manager expert panel. The data included qualitative measures of central tendency (mode, and median) as recommended in literature by Subedi (2016) and Toma and Picioreanu (2016). Results were displayed in tables and bar charts. I sent the summaries of overall ratings to the expert panel members for review and confirmation of their individual ratings for each theme accordingly. The themes for which consensus criteria were met under desirability and feasibility were included in the Round 3 questionnaire. Criteria for consensus were a mode of at least 4, a median of at least 4, and at least three quarters (12 out of 15 for Round 2) of participants rating 4 or 5 for each theme on a 5-point Likert-type scale.

Analysis of Round 3 Responses

The question for Round 3 was: Please provide separate ratings using the 5-point Likert scale below to indicate the extent to which you agree or disagree whether the themes listed under each question are of importance (in the second column) and whether you have confidence (in the third column) for it to be included in strategies to reduce

post-war project failure. To address this question, expert panel members provided ratings about importance and confidence in using the themes listed from Round 2 to reduce post-war project failure rates. The ratings were made on a 5-point nominal Likert-type scale, where 5 = strongly agree, 4 = agree, 3 = uncertain, 2 = disagree, and 1 = strongly disagree (See Habibi et al., 2014). I computed and displayed summaries using tables and bar charts, and presented to the expert panel for validation. Presentation of the summarized response categories was by mode and median for each response category. Expert panel members reviewed the returned summaries of overall ratings and confirmed their individual ratings for each theme accordingly. Criteria for consensus were a mode of at least 4, a median of at least 4, and at least three quarters (11 out of 14 for round 3) of participants' rating 4 or 5 for each theme on a 5-point Likert type scale. The themes for which participants' ratings met the consensus criteria were noted and I drew conclusions based on the expert panel members' final responses.

Issues of Trustworthiness

Credibility

Credibility involves establishment of qualitative research results as acceptable from research participants' perspectives (Kalu & Bwalya, 2017). In my study, the relationship between management strategies, KM principles, and reduction in post-war project failure rates were determined from the expert panel members' perspectives. Internal validity of the study results refers to thoroughness of measurement processes to ensure correspondence between principles under investigation, observations made, and concepts investigated (Kalu & Bwalya, 2017). I focused the study on the expert panel's

tacit knowledge and professional experiences in PM. The expert panel's expertise, knowledge, and experiences were invaluable to questionnaire development and consensus-building processes for each Delphi round of the study. Internal validity of my study was directly related to thought-out selection of expert panel members. According to Linstone and Turoff (2002), selection of the expert panel is strategic for a Delphi study to be successful. In my study, selection of expert panel members and building of consensus were undertaken without constraint, influence, or bias to ensure internal validity. Expert panel's judgments about credibility of the results were legitimate for the study.

Transferability

In qualitative research, external validity could be substituted with transferability indicating extent to which study results are applicable in situations with comparable populaces and characteristics (Kalu & Bwalya, 2017). Wahyuni (2012) posited that external validity of study results refers to acceptability and generalizability within the target population and across contexts beyond the scope of a study. I collected data from expert project managers working for organizations implementing projects within eight education subsectors in Liberia. Expert project managers selected had experience working in different geographical areas and contexts within Liberia. According to O'Brien et al. (2014), transferability involves examining if research findings hold in multiple contexts or at different periods within the same context. In my study, transferability of consensus results was determined by the results' continued efficacy over time within the post-war context and in different locations of Liberia.

Dependability

Dependability can be defined as extent to which results of a study are consistent over time and represent the population under study (Venkatesh et al., 2013). I obtained data from expert project managers with diverse backgrounds and experiences to triangulate responses. The instrument for a research study can be considered reliable if a similar methodology can be used to reproduce the study results under different circumstances. Dependability issues for my study related to generalizability of the results. To address dependability issues, I tenaciously selected participants from the project managers working with Liberia's MOE consistent with representativeness of their membership composition in the education sector cluster. Questionnaires developed were matched with those of similar studies for consistency and exhaustiveness of questions required to collect data on the study themes. In addition, the Delphi approach was used to establish dependability by administering questionnaires to the same respondents thrice to validate their responses. Erlingsson and Brysiewicz (2013) surmised further that dependability involved detailing changes that occurred within phases of a study design. During my study, I documented changes that occurred within expert panel members' post-war settings and how the changes affected each round.

Confirmability

Confirmability represents a degree of neutrality where respondents shape the research findings to prevent researcher bias, motivation, or interest (Erlingsson & Brysiewicz, 2013). According to Venkatesh et al. (2013), confirmability involved extent to which research results could be substantiated by other researchers. In this study, I

documented procedures for verifying data throughout to facilitate substantiation by researchers, research participants, and other stakeholders who might be interested in the results.

Ethical Procedures

I obtained the Walden University Institutional Review Board (IRB) approval # 08-07-17-0324650 for the study to ensure compliance with ethical standards. Participants were older than 18 years and confirmed to have expertise in post-war PM so they were not considered vulnerable to participate in the research. I sought authorization from the Research, EMIS, Statistics, and Demographics division of Liberia's MOE to conduct email interviews with its registered project managers. The authorization included an agreement to follow ethical standards of the MOE pertaining to non-interference of the members' project activities, confidentiality, and information disclosure. A written consent (See Appendix B) to participate in the interviews was signed with the project managers who volunteered their time and information (Yin, 2011).

The written consent indicated that participants could opt out of the Delphi survey at any time without any consequences. I selected 20 participants to accommodate shortfalls in the sample size due to nonresponse and participants' possible opt out of the study. Anonymity and confidentiality of participants' responses were assured and maintained as part of the written consent. Summaries of the themes developed were sent to the participants for confirmation of their responses. In addition, confidentiality was assured through restricted access with encrypted passwords to the data, instruments, and written consent documentation. There was no documented agreement between any

participant authorizing other individuals to have access to that participant's confidential information. I therefore had sole access to their confidential information.

I will disseminate findings from my study to the participants and their organizations as empirical evidence of management strategies and KM principles that project managers can use to reduce post-war project failure rates. Furthermore, my study findings will be disseminated to the MOE to guide it in coordinating projects implemented in Liberia toward reducing project failure rates. According to the Walden University regulations, all data collected will be stored for 5 years, after which the data will be deleted completely from the electronic storage system.

Summary

The case study design using the Delphi technique presented in this chapter provided opportunity to obtain data required to answer the research questions and achieve my study objectives. The research objectives were realized through responses provided by expert panel members and in development of themes and patterns toward building consensus. The research questions and approach to data collection encouraged expert panel members to use their experiences in post-war PM to share opinions about management strategies and KM principles that can be used to reduce post-war project failure rates. I undertook deductive analyses to interpret qualitative data collected using NVivo. The interview questionnaires served as checklists to manage biases and ethical or credibility issues that were identified. Research findings are presented in Chapter 4 and the summary, conclusions, and recommendations in Chapter 5.

Chapter 4: Results

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. Using the Delphi technique, I solicited opinions of 20 expert project managers who had worked in Liberia's post-war education sector for at least 2 years. The participants were selected based on their knowledge, experience, and competency in the topic under investigation as recommended by Habibi et al. (2014). The survey questions were designed based on the literature and were administered anonymously via email and Skype to solicit and collate independent opinions from an expert panel of project managers. The research questions for this study were the following:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management resources that may be suitable for reducing project failure rates?

Interview questions developed based on the research questions and used for the Delphi survey were the following:

Question 1: What competency challenges do education sector project managers working with Liberia's MOE face in reducing project failure?

Question 2: How can education sector project managers working with Liberia's MOE overcome the competency challenges and reduce project failure?

Question 3: What resources would you recommend organizations to employ in education-sector projects in Liberia to enable project managers reduce project failure?

Question 4: How may the resources provided to education sector project managers be used to reduce project failure?

Question 5: What support would you recommend the MOE provide to enable organizations implementing education sector projects in Liberia to reduce project failure?

Question 6: What knowledge management competences would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?

Question 7: How may education sector project managers working with Liberia's MOE use the knowledge management competences to reduce project failure?

Question 8: What resources for knowledge management would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?

Question 9: How may education sector project managers working with Liberia's MOE use the knowledge management resources to reduce project failure?

The interview questions provided the basis for participants to express their opinions on management strategies and KM principles that project managers can use to reduce post-war project failure. In Chapter 4, I review the research setting, participants' demographics, procedures for data collection, procedures for data analysis, evidence of truthfulness, and study results. The results form the basis for the discussion in Chapter 5.

Research Setting

The study involved 20 education sector project managers and education management team members working with projects affiliated with the Liberia MOE. The initial list of 25 project managers presented by the Liberia MOE was outdated so a more recent list that included education management team members was used for the study. Contact with each participant was made via email for familiarization and to collect demographic data. Using the demographic data, I determined the prospective participants who would participate as expert project managers and the participants who would participate as focus group members via Skype. I shared the purpose and process of the study with the prospective participants and obtained their consent before administering

the survey via email and Skype. During each round of the survey, some participants did not provide responses within 1 week to my emails as expected due to their busy work and activity schedules. Responses were provided on average within 6 weeks for each round. The delays in providing responses by the participants prolonged the data collection process. Nonetheless, I expressed appreciation to all participants for creating some time to participate in the study.

Demographics

To select participants, I used purposeful sampling according to my predetermined selection criteria for the study. The criteria included selecting participants who had worked in post-war Liberia and/or other post-war contexts for at least 2 years, worked as a project manager or education management team member for at least 2 years, had at least a bachelor's degree or equivalent, and were working for an education sector organization registered with Liberia's MFDP at the time of the study. Twenty participants who consented to participate in the study were selected, and each of them was more than 18 years old. The participant sample comprised 65% (n = 13) males and 35% (n = 7) females suggesting that the responses obtained could be dominated by opinions of male participants. Some of the participants worked with organizations implementing education-sector projects in one or more of the 15 counties within Liberia whereas others worked with projects that covered all counties in Liberia. For administrative purposes, participants' headquarters were located in Monrovia and their operations took place throughout Liberia, so participants shared experiences gathered from the whole country.

The data revealed that seven of the 20 participants were implementing project activities across multiple education subsectors. The subsector that had highest percentage of participants implementing project activities was education management (45%, *n* = 9) followed by general education (30%, *n* = 6). Table 2 outlines the demographics of participants.

Table 2

Demographics of Participants by Education Subsector

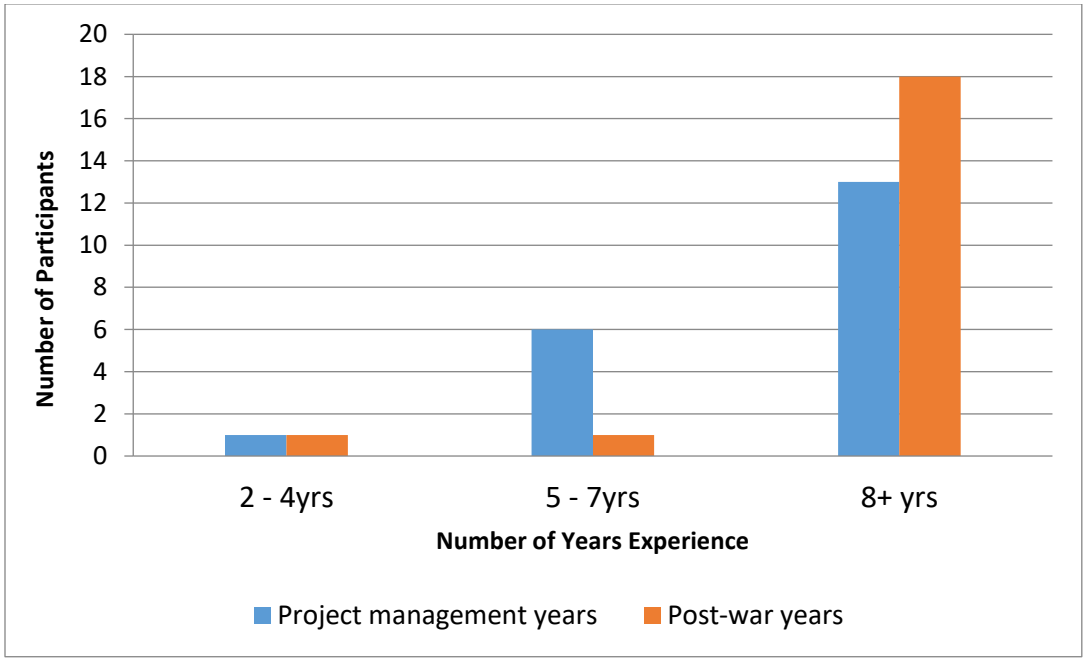
Education subsector	Percentage of participants (*N* = 20)
Education management	45%
General education	30%
Basic education	20%
Secondary education	20%
Girls education	20%
Early childhood education	15%
Vocational/skills training	15%
Teacher training	15%

The study found out that institutions and organizations working within the education sector were required to register with the Liberia MFDP as a prerequisite to be affiliated with the MOE (National policy on non-governmental organizations in Liberia, 2008). In view of this, all participants' organizations had registered with the MFDP as organizations affiliated with the MOE. A separate registration with the MOE was however optional. Responses provided by participants indicated that 85% (*n* = 17) of participants' organizations had registered separately with the MOE, and 60% (*n* = 12) had experience engaging the services of a KM professional.

Although participants represented a broad spectrum of the education sector departments, the data suggested that opinions of participants working in education management who were in the majority may have dominated the responses provided. Participants who had experience of at least 8 years working within a post-war environment and as project managers represented 70% (*n* = 18) and 57% (*n* = 13) respectively. Overall, opinions of participants working in education management who had at least 8 years of experience within the post-war context may have dominated the responses obtained. Figure 3 is a bar chart showing participants' numbers of years experience working in PM, and within the post-war context.

Figure 3

Participants' Years of Experience in PM Within the Post-War Context



Data Collection

After obtaining approval from the Walden University Internal Review Board (IRB), I contacted the Liberia MOE for a list of projects implemented by organizations working within the education sector, funded by international organizations, and registered with the MOE. A list of 25 organizations and emails of project managers implementing their projects in Liberia was provided by the MOE but later found to be outdated because some of the projects had closed and their project managers had left Liberia to work in other countries. A second list was provided by the MOE that included all organizations listed in the Liberia education cluster. This list included 75 education sector development organizations that had registered with the Liberia MFDP. According to the National Policy on Non-governmental Organizations in Liberia (2008), all development organizations working in Liberia are required to register with the MFDP.

I emailed invitation letters and the demographic questionnaire to 218 prospective participants in the Liberian education cluster list to solicit their participation in the study. Twenty-seven prospective participants completed and returned the demographic questionnaire to me via email. Based on information summarized from the demographic questionnaires, I selected four panel members to be included in focus group Skype discussions and presented consent letters to them. The four panel members were selected using their qualifications, and consent provided via email, to be part of the study as focus group members. Next, I emailed consent letters to the 23 potential expert project manager panel members who had agreed to participate in the study. Sixteen of the prospective participants consented to participate in the study as expert project manager panel

members. Their responses to me by email with the phrase “I consent” implied formal agreement to participate in the study instead of signing and returning the consent form to me. I thanked the expert panel and focus group members for consenting to participate in my study.

Next, I emailed the open-ended questionnaire developed for Round 1 to the 16 expert project manager panel members at various locations in Liberia. Even though the questionnaire could take 30 minutes to complete, I requested participants to complete and return to me within 1 week. However, few of them could do so within 1 week due to their busy schedules. On average, I received the responses within 6 weeks. A unique alphanumeric identity number was assigned to each participant to ensure anonymity of their responses. I reviewed the open-ended responses provided by the expert project managers, hand coded and summarized using Nvivo TM (version 11) software, and discussed with the four focus group participants via Skype for endorsement or otherwise. I then presented the summaries from the Skype focus group discussion to the expert project managers for confirmation of their responses or otherwise.

Using the summarized themes, I developed a close ended questionnaire for Round 2 that consisted of a 5-point Likert scale on desirability and feasibility of using the themes as strategies to reduce post-war project failure rates. The questionnaire was presented to IRB for approval. After IRB approved the Round 2 questionnaire, I emailed the Round 2 questionnaire to the 16 expert project managers to provide their ratings and return to me via email. However, after sending several reminders 15 expert project managers provided their responses to me. One project manager dropped out of the study

due to the prolonged duration of data collection. Responses provided by the 15 expert project managers were discussed with the four focus group discussion panel members via Skype for endorsement or otherwise. I used the themes endorsed by the focus group panel members to develop a 5-point Likert scale questionnaire for Round 3 on importance and confidence of using the themes as strategies to reduce post-war project failure rates. I then presented the Round 3 questionnaire to IRB for review and approval.

After IRB approved, I emailed Round 3 questionnaire to the 15 expert project managers to provide ratings on importance and confidence of using the themes as strategies to reduce post-war project failure rates. The expert project managers provided their responses within an average of 6 weeks to me via email after I had sent several reminders. Another participant dropped out of the Round 3 survey due to the prolonged duration. I summarized Round 3 responses obtained from the 14 expert project managers and discussed with the focus group panel members for endorsement or otherwise. The themes endorsed by the focus group panel members, for which consensus criteria were met, were documented as strategies recommended by the expert project managers to be used to reduce post-war project failure rates. Participants' identities were kept anonymous throughout the study, and I will keep the data on an external drive with a password for five years before destroying them.

Even though the duration for expert project managers to complete and return the questionnaires to me was 1 week, I provided opportunity for participants to submit their responses as their busy schedules could permit. This prolonged each round of data collection to an average of 6 weeks thereby significantly delaying the process. During the

Skype focus group interactions, I created sufficient time for the group members to reflect and provide their opinions about themes derived from the expert project managers' responses.

Data Analysis

I reviewed responses provided by the expert project managers to comprehend their perceptions of management strategies and KM principles that project managers can use to reduce post-war project failure. Initial codes were developed in MS-Word based on patterns identified. The coding process included a comprehensive review of responses received to identify significant statements that framed participants' views in relation to PM within the post-war context. After undertaking an initial hand-coding in MS-Word I categorized the responses into patterns and themes until no new information emerged signifying attainment of data saturation as recommended in literature by Fusch and Ness (2015). Aggregation of coded responses under each category into themes gave an indication of the project managers' perceptions of management strategies and KM principles that should be included in the study.

I grouped the themes into significant components under each interview question. Codes and precise descriptions were created for each theme identified. The coded themes prearranged in Microsoft Word were imported into NVivo version 11 software and organized into nodes for further analysis (See QSR International, 2014). I used content analysis to complete the coding into nodes and sub-nodes within NVivo. Content analysis is a research technique of systematically coding and classifying texts or oral messages to provide a representation of patterns and trends (Ngulube, 2015). The analyzed themes

were then discussed with the four focus group members via Skype for endorsement or otherwise. Use of NVivo version 11 software technology for qualitative analysis ensured consistency in my data management procedure and increased the speed of data analysis process. The data were summarized and displayed as shown in Table 3.

Table 3

Coding of Responses

Name	Number of coding references	Number of nodes coding (themes)
Coding of Round_1_Question_1N	45	5
Coding of Round_1_Question_2N	34	4
Coding of Round_1_Question_3N	38	4
Coding of Round_1_Question_4N	27	4
Coding of Round_1_Question_5N	31	4
Coding of Round_1_Question_6N	34	6
Coding of Round_1_Question_7N	23	5
Coding of Round_1_Question_8N	29	7
Coding of Round_1_Question_9N	15	3

The data were organized in MS-Word, uploaded into Nvivo, and analyzed by the researcher to ensure reliability. Analysis by the researcher ensured integrity and confidentiality of the results. Forty-two themes developed from responses provided by the expert project managers and retained through the focus group process are outlined as Findings (See Appendix P) under each research question and sub-question as follows:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

Competency challenges to be addressed to enable Liberia's education sector project managers reduce post-war project failure were: limited organizational skills, limited technical capability, weak leadership quality, poor project implementation strategies, and unsatisfactory financial management practices. Recommended strategies that project managers could use to overcome the competency challenges and reduce project failure were: strengthen technical capacities of project teams, strengthen organizational structures; improve project planning, implementation, monitoring, and evaluation; and ensure adequate allocation of funds for project activities.

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

Qualified and competent staff, adequate logistics, adequate project funding and time allocation, and shared knowledge from previous projects were the resources recommended by the participants for organizations to employ to enable education sector project managers reduce post-war project failure. Strategies to use the recommended resources were the following: ensure financial compliance and accountability; ensure effective and efficient project implementation, monitoring, and evaluation; use resources to develop capacity of project staff, and ensure effective donor-partner coordination.

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

According the participants, support that the MOE could provide to enable organizations implementing education sector projects in Liberia to reduce project failure were: enforce standards and compliance, strengthen overall project monitoring system, develop technical capacities of local staff, and share knowledge and key documentation with projects.

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

Six KM competences recommended by the participants to enable project managers reduce project failure were the following: effective communication skills, knowledge creation skills, knowledge-sharing skills, knowledge acquisition skills, knowledge utilization skills, and sector-specific technical knowledge. To use the KM competences, participants recommended the following: communicate project goals, objectives, and resources needed to accomplish objectives; network and collaborate with project stakeholders to review project progress, ensure that project tasks are completed by project teams, develop internal technical capacity, and appropriately delegate responsibilities to local staff.

RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about KM resources that may be suitable for reducing project failure rates?

Seven KM resources recommended by the participants for education sector project managers working with Liberia's MOE to use to reduce project failure were the following: data management system, periodic project review system, adequate logistics, capacity development system, documented lessons from projects, qualified and competent staff, and strong network of stakeholders. Strategies recommended for project managers to use the KM resources included: organize project team members to implement project effectively, regularly conduct project performance reviews, and establish user-friendly KM systems that are accessible to all employees.

The themes were rated on a 5-point Likert-type scale by the expert project managers on desirability and feasibility during the second-round of the survey. I used the SPSS software and Microsoft Excel to analyze the Likert-type ratings provided by the expert project managers and summarized the results in tables and charts. The summary of Round 2 ratings provided by the expert project managers was discussed with the focus group participants via Skype for endorsement or otherwise. The themes for which consensus was reached during the second-round survey were rated during the third-round of the survey. A 5-point Likert-type scale was used by the expert project managers to rate the second-round themes on importance and confidence, and I analyzed the ratings using the SPSS software and Microsoft Excel.

Evidence of Trustworthiness

Credibility

I focused the study on the expert panel's tacit knowledge and professional experiences in post-war PM. Selection of expert panel members and consensus-building processes were undertaken without constraint, influence, or bias to ensure internal validity as recommended by Avella (2016). Documentation of management strategies and KM principles that could be used to reduce post-war project failure rates was based on the expert panel members' perspectives. The expert panel's judgments about credibility of the results were legitimate for the study.

Transferability

I collected data from project managers working for organizations within Liberia's education sector. Expert project managers selected had experience working in different geographical areas and contexts within Liberia. Transferability of consensus results was determined by the results' continued efficacy over time within the post-war context and in different locations within Liberia. However, researchers other than the original researcher may be better positioned to determine whether findings from one context apply to another context (See C. Marshall & Rossman, 2016).

Dependability

Dependability can be defined as extent to which results of a study are consistent over time and represent the population under study (Venkatesh et al., 2013). I obtained data from participants with diverse backgrounds and experiences within Liberia's education sector to triangulate responses. To address dependability issues I tenaciously

selected participants from education managers affiliated with Liberia's MOE in accordance with requirements of the MFDP. Questionnaires developed were matched with those of similar studies for consistency and exhaustiveness of questions required to collect data on the study themes. According to Anney (2014), the instrument for a research study can be considered reliable if a similar methodology can be used to reproduce the study results under different circumstances. In addition, I used the Delphi approach to establish dependability by administering questionnaires to the same respondents thrice to validate their responses. Erlingsson and Brysiewicz (2013) surmised that dependability involves detailing changes that occur within phases of the study design. During my study, I documented changes that occurred within expert panel members' team and how the changes affected each round.

Confirmability

Confirmability represents a degree of neutrality where respondents shape the research findings to prevent researcher bias, motivation, or interest; and the extent to which research results could be substantiated by other researchers (Erlingsson & Brysiewicz, 2013; Venkatesh et al., 2013). In this study, participants validated their responses against the response summaries returned to them after each round of Delphi survey, made adjustments where they found it necessary to align their views with the summarized responses, and proposed other themes that could be included in the study. I documented procedures for verifying data throughout to facilitate substantiation by researchers, research participants, and other stakeholders who might be interested in the results.

Study Results

The study findings provided understanding of participants' perceptions of management strategies and KM principles that project managers can use to reduce post-war project failure. The results also provided information about challenges experienced by project managers implementing projects within Liberia's post-war education sector and how the challenges could be addressed. Themes identified by the participants were classified in terms of desirability and feasibility, and further classified in terms of importance and confidence to be used as strategies to reduce post-war project failure. The following sections include findings related to each research question and a discussion of the themes developed from the participants' responses. The discussions include direct quotes from the participants' responses to the questionnaires administered. I assigned the letter "T" followed by a two-digit number to each participant to ensure anonymity, so the first participant's code number was T01 and the 20th was T20.

Analysis of Research Question 1

The first research question comprised one main question expounded in three sub-questions as follows:

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

RQ1a. How may the competencies of education sector project managers working with Liberia's MOE be enhanced to reduce post-war project failure rates?

RQ1b. What are the perceptions of education sector project managers about types of resources that may be suitable for reducing post-war project failure rates?

RQ1c. How may Liberia's MOE provide organizational support to enable project managers reduce post-war project failure rates?

The questions were further elaborated into five interview questions that were posed to the participants.

Findings

Responses were categorized into 21 themes for the three sub-questions under RQ1. There were nine themes for RQ1a, eight for RQ1b, and four for RQ1c. The themes represented core perceptions of the 20 expert project managers who participated in the study. I present analysis of the themes for each research sub-question of the research questions.

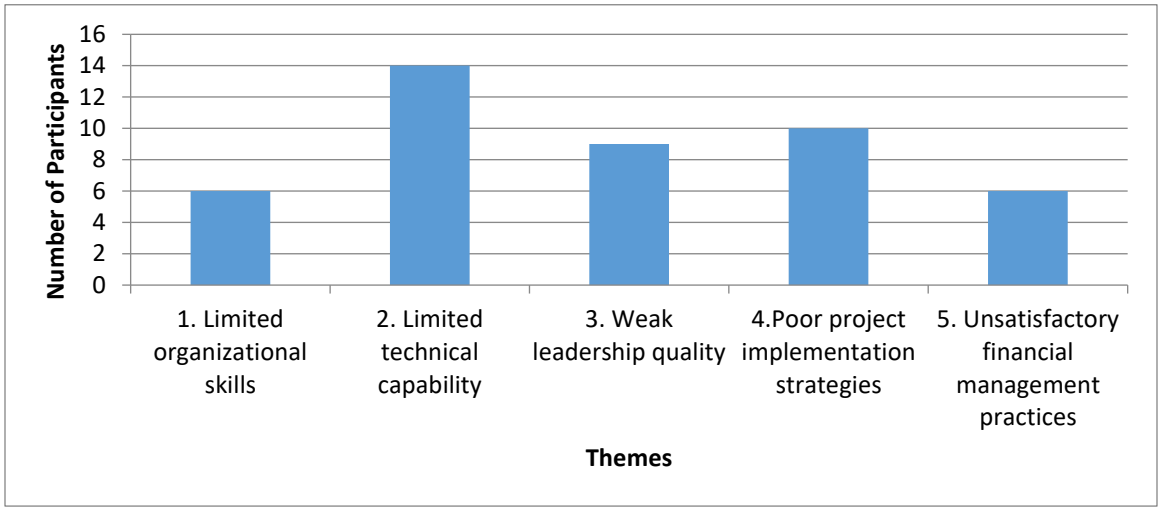
RQ1a. How May the Competencies of Education Sector Project Managers Working with Liberia's MOE Be Enhanced to Reduce Post-War Project Failure Rates?

Nine themes were developed using responses obtained from the questions under RQ1a. The first five themes focused on competency challenges faced by the education sector project managers and the next four themes focused on strategies to overcome the competency challenges. The themes were: limited organizational skills, limited technical capability, weak leadership quality, poor project implementation strategies, unsatisfactory financial management practices, strengthen technical capacities of project teams, strengthen organizational structures, improve project planning, implementation, monitoring, and evaluation, and ensure adequate allocation of funds for project activities.

Results from the study indicated that the competency challenge referenced most by participants (14 out of 16) as plaguing post-war Liberia's education sector project managers was: limited technical capability. The reasons cited included insufficient knowledge about the education sector and performance indicators, and inadequate background training for project team members. Figure 4 displays the themes under competency challenges to be addressed, and the number of participants whose responses were aligned with each theme.

Figure 4

Summary of Themes for Competency Challenges Identified



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

1. Limited Organizational Skills.

Participants' Supporting Statements

T06: "Lack of organizational and leadership skills . . . and basic knowledge of educational tools and systems that could be implemented."

T08: "The regular change in leadership . . . regularly replaced senior staff . . . who may have the expertise and experience in providing some guidance to those implementing educational projects/activities in Liberia."

T09: "The competency challenge faced is difficulty in matching managers to projects. Managers are charged with responsibilities based on availability."

T13: "Limited exposure of personnel at all levels from top to bottom: to systems with higher standards of learning; to systems where all personnel put out higher levels of effort; to a culture where reading and self-improvement are valued; to a straight merit-based system . . . to an education environment where teachers work to make the best use of textbooks available to them."

T14: "Additionally, appointments for meetings are usually not held due to poor planning and organizational skills."

T16: ". . . also, the availability of a sound operating environment."

2. Limited Technical Capability.

Participants' Supporting Statements

T01: "Intercultural communications and life skills relevant to working in fragile environments."

T03: "Limited demonstrated knowledge of understanding the expected results and goals of the projects and aligning strategies, activities with the goals . . . keeping a focus on what is expected."

T07: "From the individual perspective, it is usually limited knowledge of the sector. From the institutional perspective, there are usually challenges associated with data and frequent policy and priority shifts."

T08: "One of the major challenges faced by the education sector project managers is the poor teacher educational background."

T09: "Most managers do not understand the Education indicators, priorities to improve the education sector, or do not have content knowledge to set and implement priorities."

T10: "Lack of computer literacy . . . . Lack of capacity building in instruction, assessment, and grading."

T12: "Project management knowledge-specific logical framework and results framework development, and achieving project expected results."

T13: "Capacity and understanding of how to use data: there was a surprising lack of knowledge of, and interest in, the data . . . after the project ended."

T14: “For example, a letter written any of these officials is not properly filed and so making a follow-up, one always has to take along a copy of said letter. Another example is a request or problem that can be solved in few hours, can take days to get resolved.”

T16: “Attracting and retaining the required competent staff. There is still a huge gap for the much-needed trained teachers in the education sector generally, but with the primary level in particular . . . . Ever growing technology needs in the current days’ education program.”

T17: “. Howbeit, some of the managers are not really schooled in the educational sectoral areas to facilitate full delivery of what is expected. Some of them are generalists either in the social or natural sciences, and not specifically in Education. Thus, responding to education sector issues can be challenging.”

T19: “The competency challenges education sector project managers face . . . is true monitoring and evaluations . . .”

T20: “From my experience managers need to commit to a planning process and develop monitoring mechanisms. Firstly, subsector managers need to be supported to develop key outputs from objectives of their sector’s thematic areas. This requires their understanding of policies and plans of the entire sector . . .”

3. Weak Leadership Quality.

Participants’ Supporting Statements

T01: “Negotiation skills to be able to undertake effective policy dialogue and decision-making.”

T02: “The almost lack of supervision in the school system.”

T06: “Lack of organizational and leadership skills, and basic knowledge of educational tools and systems that could be implemented.”

T07: “There is sometimes poor working relationship between responsible persons from the Ministry and the project team.”

T08: “The regular change in leadership, regularly replaced senior staff who may have the expertise and experience in providing some guidance to those implementing educational projects/activities in Liberia.”

T09: “Many Education project managers do not have the education leadership background.”

T12: “Others include team work, project report writing, and meeting project deadlines.”

T18: “Performance management, leadership ability, accountability, and expectation management.”

T19: “. . . procurement processes and the political will to support the project.”

4. Poor Project Implementation Strategies.

Participants’ Supporting Statements

T01: “Another though perhaps not really a competency challenge - Lack of institutional memory due to staff turnover within our institutions.”

T03: “Planning and following-up with implementation, this is also reflected in the continuous lack of monitoring at field level.”

T06: “Lack of basic knowledge of educational tools and systems that could be implemented to enhance the present broken system.”

T07: “Another hidden problem is time between project approval and implementation.”

T12: “Project management knowledge . . . and achieving project expected results.”

T13: “Inability to identify and address priorities, for example an understanding of how the inability of students leaving elementary school to read impacts education at all levels and what to do about it.”

T14: “Another example is a request or problem that can be solved in few hours, takes days to get resolved.”

T17: “. . . but because project teams do not get the required support in many instances, their expectations and aspirations are dampened.”

T18: “Performance management . . . and expectation management.”

T20: “From my experience managers need to commit to a planning process and develop monitoring mechanisms. Firstly, subsector managers need to be supported to develop key outputs from objectives of their individual thematic areas. This requires their understanding of policies and plans of the entire sector . . .”

5. Unsatisfactory Financial Management Practices.

Participants’ Supporting Statements

T03: “It is often very difficult for . . . to account for funds received through narrative and financial reports.”

T09: “Inadequate budgetary support to project priorities. Available funding is not disaggregated based on priority needs.”

T10: “Inadequate financial support.”

T16: “. . . sharp drop in the cost of funding for an effective education program.”

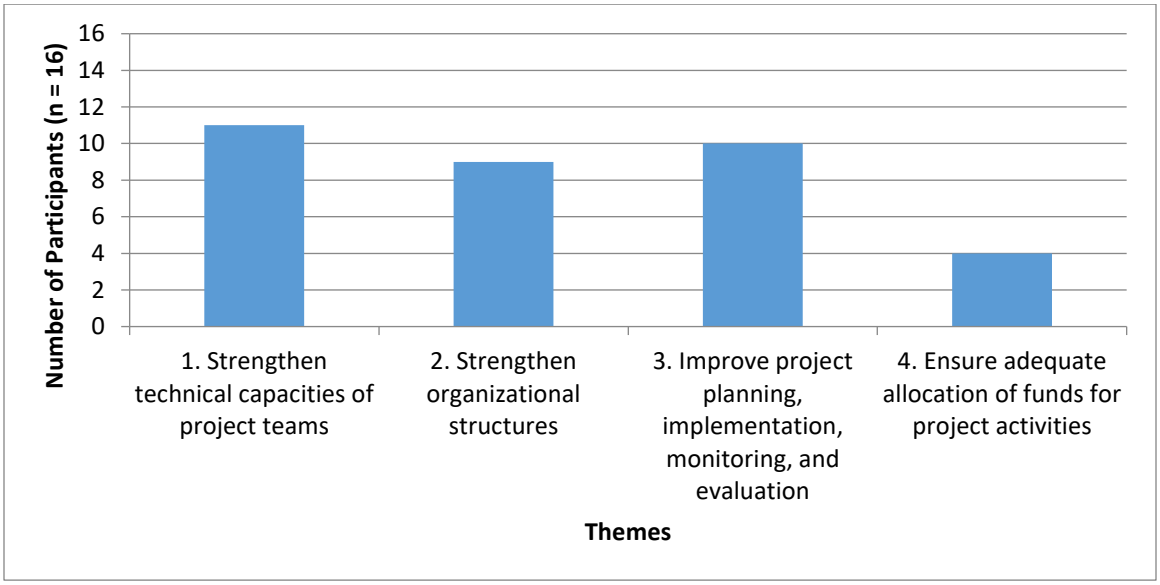
T18: “Leadership ability and accountability.”

T19: ". . . procurement processes and the political will to support the project. Sometimes lack of sufficient funding."

The next four themes developed from participants' responses under RQ1a were strategies for project managers to overcome competency challenges and reduce project failure. The most referenced strategy indicated by participants (11 out of 16) for project managers to overcome the challenges faced was: strengthen the technical capacities of project teams. This according to the participants could be achieved through training, mentoring, and coaching activities in collaboration with donors and partners within the education sector. Figure 5 displays the themes identified as strategies to address the competency challenges, and the number of participants whose responses were aligned with each theme.

Figure 5

Summary of Themes for Overcoming Competency Challenges



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

6. Strengthen Technical Capacity of Project Team Members.

Participants' Supporting Statements

T01: "Trainings at the inception of their assignment focused on negotiation and mediation skills for policy dialogue and project implementation. By actively participating in in-country processes such as the Education sector plan, and Education sector analysis development to gain in depth exposure to the sector."

T03: "Constant training and sometime through study visits to other functioning countries, to learn from best practices . . . . Mentorship programs."

T07: ". . . getting managers who understand the dynamics of the sector, work with credible and reliable data, and build stronger collaborative working relationship between Ministry and project team."

T08: "The managers need to advocate for teacher capacity strengthening. Advocate for recruiting qualified and competent as well as experienced managers to maximize the risk in project failure . . . should as well revise their teacher training curricula to match the current need in the education sector."

T09: "Recruit managers with high competency in educational leadership and content . . . professionals in the education sector should be appointed to manage educational projects."

T10: "Embark on computer literacy skills to enhance learning in concrete skills . . . curriculum development to support realistic developmental skills for livelihood."

T12: ". . . coaching, mentoring / training to rectify competency gaps using PM case study derived from the Liberian context."

T13: "Work with donors and project managers of all related projects to develop a shared set of priorities for the Liberian education sector, which in my opinion would all be centered on the capacity of post-war personnel, and a set of complementary actions to address it."

T17: "In the first place, there needs to be refresher training or intensive briefing as well as delineated terms of reference, and details of what needs to be done. Project teams have to work on the issues at hand with all hands on deck, and the clear competencies required for the tasks."

T20: "Education sector managers need to focus on capacity building of the subsectors."

7. Strengthen Organizational Structures.

Participants' Supporting Statements

T01: "By establishing close dialogue, and collaborative and close relations with other development partners as this would help harness best practices and lessons learnt which can in turn fill competency gaps. However ultimately some bottlenecks can only be really resolved through the establishment of improved reporting and communications systems internally and to development partners"

T03: "Through organized structures such as project steering committees where project partners come together to organize, plan, review plans and make recommendations for the way forward."

T06: “To overcome the competency issues and to reduce project failures we must focus on the bottom up approach. We must do the minimum necessary requirements, and within the institution must we have tight controls for extended periods of time to become part of the working culture within the institution, company or organization.”

T10: “Ensure relevant conditions and materials are readily available.”

T14: “One major way of overcoming these challenges is to widen the network of stakeholders who may . . . fall within the jurisdiction of other line ministries or agencies.”

T16: “That staff are able to bring not only skills but also corresponding integrity and commitment that ensures achievement of the project goal in a sustained manner.”

T17: “. . . delineated terms of reference and details of what needs to be done.”

8. Improve Project Planning, Implementation, Monitoring, and Evaluation.

Participants’ Supporting Statements

T01: “Harness best practices and lessons learnt which can in turn fill competency gaps . . . by actively participating in regular annual joint Education sector reviews with development partners.”

T02: “The project manager has to increase supervision in his or her own program.”

T03: “Share best practices through organized structures such as project steering committees where project partners come together to organize, plan, review plans and make recommendations for the way forward.”

T07: “As mentioned reduce time span between project approval and actual implementation. If implementation time is long, there is a need to discuss with the

Ministry to find out if a priority intervention and strategy remain unchanged. Otherwise, adjust the project where necessary in response to current reality."

T13: "Work with donors and project managers to develop a shared set of priorities for the Liberian education sector."

T17: "The education managers have to be open-minded, professional, and respectful in their collegial relationship with their Liberian partners, and work on the issues at hand with all hands on deck."

T18: "Hands-on monitoring of project activities, timelines and assets."

T19: "They can overcome it by always putting the monitoring and evaluation system in place; procurement processes in place, and let the project user be knowledgeable about the project."

T20: "There are many stakeholders working in the field of education that are not syncing their activities. Most international non-governmental organizations working in post-war education development were working in line with their individual country strategies developed by their organizations."

9. Ensure Adequate Allocation of Funds for Project Activities

Participants' Supporting Statements

T06: "Micro-managing, positive reinforcement, providing resources, and decent compensation all play important roles in reducing project failures."

T09: "Education Budget should be disaggregated according to projects' priorities."

T16: "By the education project managers being given the required resources to attract and retain the relevant staff."

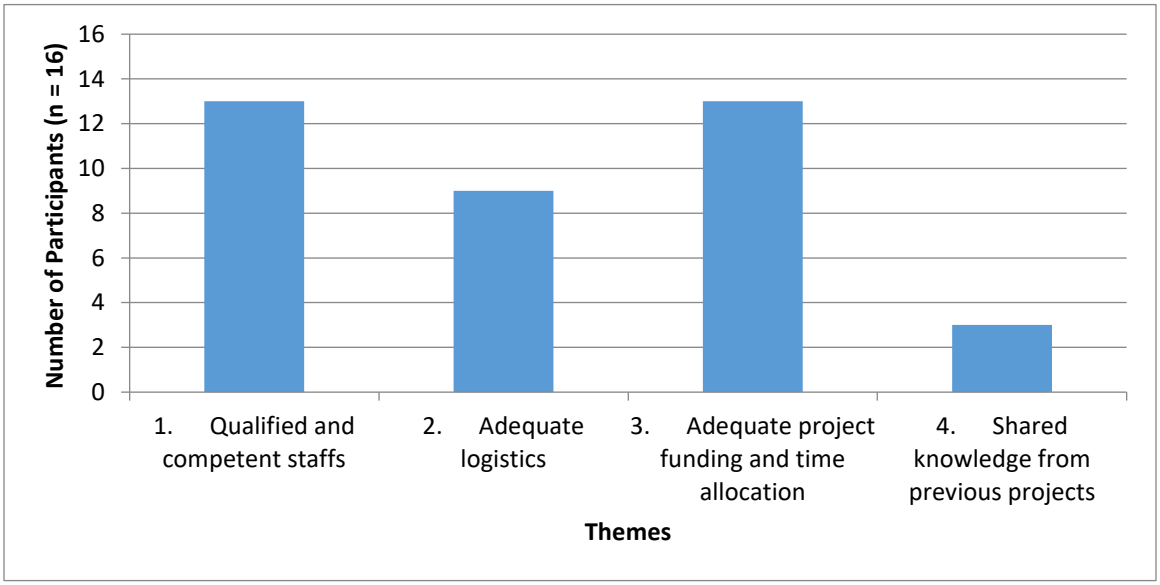
T17: “Finally, the full logistical and financial support must be made available if the required results should be attained. This is commonly lacking for the Liberian managers.”

RQ1b. What Resources May Be Suitable for Education Sector Project Managers Working with Liberia’s MOE to Reduce Post-War Project Failure Rates?

Eight themes were developed using responses obtained from the questions under research RQ1b. The first four themes focused on resources recommended to be employed by organizations to enable project managers reduce post-war project failure. The themes were: qualified and competent staff, adequate logistics, adequate project funding and time allocation, and shared knowledge from previous projects. Most of the participants (13 out of 16) perceived that resources needed to support Liberia’s post-war education sector project managers included qualified and competent staff, and adequate project funding and time allocation. From participants’ viewpoints the resources could ensure stability, trust, and commitment; and lead to reduction of project failure. Figure 6 displays the themes identified under the resources to be employed and the number of participants whose comments were aligned with each theme.

Figure 6

Summary of Themes for Resources to Be Employed by Organizations



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

10. Qualified and Competent Staff.

Participants' Supporting Statements

T02: "Qualified and competent staff, logistics, and staff compensation."

T03: "Human resource- experts . . . and training staff to equip them with skills needed during the lifespan of a project for data collection, effective monitoring, project planning."

T08: "Human resource capacity building in real time monitoring."

T10: "Capacity building in educational areas to target concrete skills development."

T12: "Provide financial assistance and training in PM."

T13: “Exposure trips should not be short; a semester or several-month workshop is needed in another country that would reveal to the beneficiary, the standards of work and level of achievement of their peers in other countries. This could be preceded and followed with training and mentoring in Liberia.”

T14: “Hiring of competent local staff is also vital to the survival of education sector projects.”

T16: “The resources that are required and recommended by organizations implementing education sector projects in Liberia are the required trained staff.”

T19: “Human resource . . .”

T20: “Human Capacity development in domesticating the Sustainable Development Goal 4 in addition to local needs should be emphasized.”

11. Adequate Logistics

Participants’ Supporting Statements

T03: “Vehicles; funding allotment that considers the behaviors, attitudes and expectations of the Liberian project beneficiaries, both locals and government; for the short term and gradually shifting away to a more sustainable enabling approach.”

T07: “Logistics to ensure rigorous monitoring of a project is also a crucial requirement. Depending on where the project is being implemented, a vehicle or motorbike with fuel as may be required is imperative. Regular maintenance is also key.”

T08: “Logistics (vehicles and motorbikes); Computers, mobile phones, and Learning / Instructional materials.”

T10: *"*Requisite educational materials, computers and internet connectivity, laboratory & library, and conducive working and child friendly environments."

T16: *"*The resources are: logistical and materials support, attractive salaries and incentives as well as motivations and benefits."

T17: *"*Computers (laptop or desktops), unhindered internet connectivity, vehicles, adequate stationery, ventilated and well-equipped office space, presentation equipment (flip charts, projectors, projector screen, printers, photocopiers)."

12. Adequate Project Funding and Time Allocation

Participants' Supporting Statements

T06: "Time, there needs to be a 10 to 20-year plan put in place. Nothing in Liberia happens fast and especially in the education sector. Along with this there needs to be a long-term financial plan put in place that shows how this institution will be funded for its total life span."

T07: "Some of the key resources are: adequate and reasonable compensation."

T09: ". . . and adequate funding to provide remuneration for staff."

T10: "Incentives and motivations packages, . . ."

T12: "Provide financial assistance and training in PM."

T13: "Resources that permit exposure and study visits of beneficiaries. Sufficient time to implement, measure, and follow up with beneficiaries."

T14: "Education sector project managers must have adequate, if not sufficient, financial resources when implementing a project."

T16: ". . . attractive salaries and incentives as well as motivations and benefits."

T17: ". . . adequate financial remuneration commensurate with qualifications and scope of the tasks and the required human resource attendants/assistants."

T18: "Resources have to be allocated in line with the project plan, condition and location."

T19: "Some resources I would recommend are: funding, and the political will."

13. Shared Knowledge from Previous Projects.

Participants' Supporting Statements

T01: "For orientation and familiarization with the sector: 1) Lessons learnt compiled from past projects in education and evaluation reports from key projects financed by various donors in country, 2) Education sector plan 2017-2021, 3) Education sector analysis (2016), 4) EMIS/School census published over a period of at least 3 years for comparative analysis of education statistics."

T07: ". . . ensure rigorous monitoring of projects . . . "

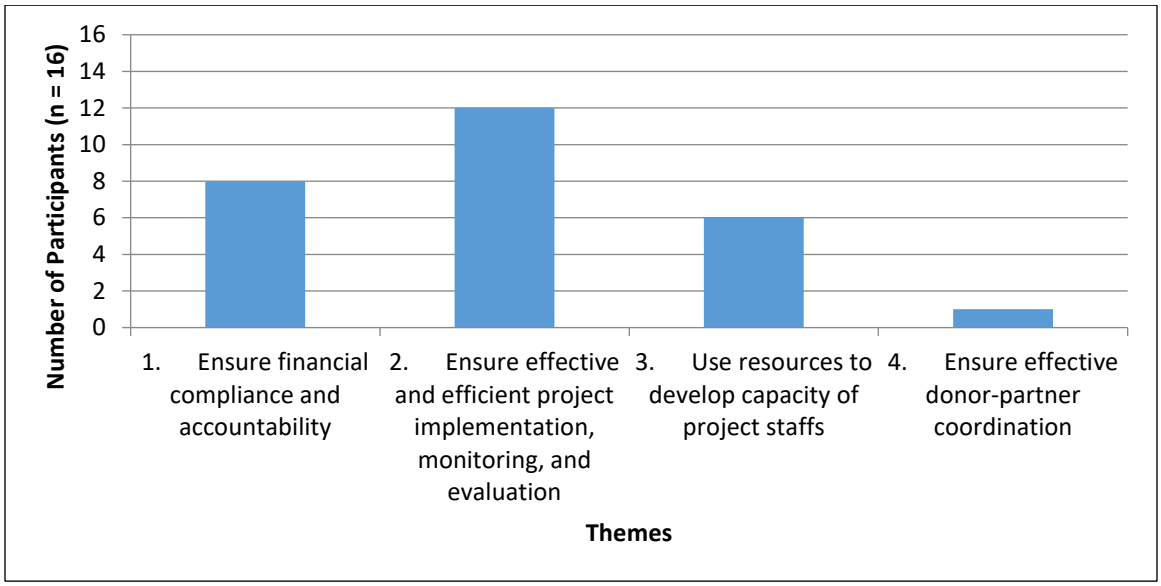
T20: "For example the issue of disability in the education system has never been addressed due to lack of empirical data to develop programs."

The next four themes focused on how the resources provided for education sector project managers may be used to reduce project failure. The themes were: ensure financial compliance and accountability, ensure effective and efficient project implementation, monitoring, and evaluation; use resources to develop capacity of project staff, and ensure effective donor-partner coordination. The most referenced strategy indicated by participants (12 out of 16) for project managers to use the resources was: ensure effective and efficient project implementation, monitoring, and evaluation.

Participants commented that resources provided should be consistent with project plans, policies, and time frames with requisite compensation for project staff in order to use the resources as planned. Figure 7 displays the themes about how project managers may use the resources provided to reduce project failure, and the number of participants whose responses were aligned with each theme.

Figure 7

Summary of Themes About How Project Managers May Use Resources Provided to Reduce Project Failure



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

14. Ensure Financial Compliance and Accountability.

Participants' Supporting Statements

T03: "Ensure effective system and control mechanisms in finances, procurement . . ."

T06: "If an adequate amount of time and funding are allocated to an educational program then it provides the project manager time to work on local solutions to local problems."

T07: "There should be periodic reporting on resource utilization to ensure compliance and accountability."

T14: "In the case of running a school, salaries for local staff must be paid through the project funding. Incentive such as medical insurance is also important."

T16: "By ensuring that Managers and or project staff working on the education sector projects are paid according to their respective professional skills, competence and qualification."

T17: "The resources should be well catalogued and accounted for accordingly for transparency. In short, resources must be used scrupulously for the intended purposes."

T18: "Project resources must be used in compliance with project protocol and be available on time."

15. Ensure Effective and Efficient Project Implementation, Monitoring, and Evaluation.

Participants' Supporting Statements

T02: "Qualified staff with good incentives and motivation, and needed logistics, can provide robust supervision to ensure that the project is implemented effectively and efficiently according to plan."

T03: “Check and ensure the sufficiency of resources, resources are often very limited. Sometimes project teams address certain aspects of the project but ignore other aspects that are important to achieve the desired outcomes.”

T06: “Money alone is not the answer but time is also a contributing factor. There needs to be enough time to try local ideas, build on the ones that are working, and change the ones that don’t.”

T07: “Resources provided should be used consistently with project implementation plans and policies.”

T08: “Project managers, supervisors, and district education officers’ capacities should be strengthened in data collection on teachers and pupils’ attendance, long range and lesson plans supervision, classroom management styles, and the continuous use of the national curricula across the country.”

T08: “The availability of learning and instructional materials will help boost effectiveness and efficacies of school projects thereby promoting successes instead of failures.”

T09: “Education Project managers need to design a resource tracking framework to track equipment assigned to personnel.”

T10: “Through an appropriate and robust M&E system, and by accessibility to educational facilities by project managers. Resources are needed to facilitate mobility.”

T13: “By providing lots of financial resources for training and exposure, and lots of time.”

T14: “To successfully run a very good school, it must have access to water and electricity. For the long-term sustainability, alternative energy will be the best option. The supply of stationery and office equipment such as copiers, printers and computers will aid in the smooth running of the school.”

T18: “Project resources must reflect the life spans of the project in terms of quality and quantity.”

T20: “Project failure usually is a result of poor monitoring mechanisms. Any framework for monitoring and evaluation must first be rolled out to project employees in each subsector. This must also be backed by resources for information gathering to strengthen projects and programs.”

16. Use Resources to Develop Capacity of Project Staff

Participants’ Supporting Statements

T01: “The resources would be useful for self-orientation and self-learning through self-study.”

T09: “Policy makers need to develop and implement policies to safe-guard the proper use of resources available for any education project by project staff.”

T12: “Use it through training in project managers’ gaps/needs areas in a Management Development Institute.”

T13: “By providing lots of financial resources for training and exposure.”

T17: “The resources should be square-pegged. That is, each resource provided for should be made clear to avoid misuse or disuse by project staff.”

17. Ensure Effective Donor-Partner Coordination

Participants' Supporting Statements

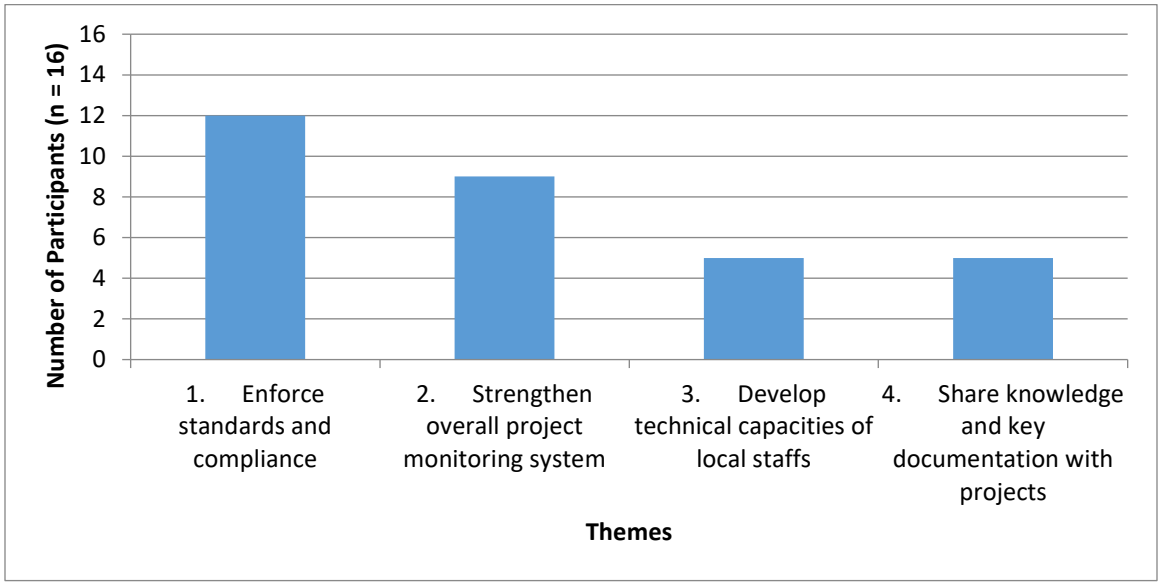
T01: "They may be useful for donor and development partner coordination, and knowledge management if available in an easily accessible open source platform."

RQ1c. What Organizational Support Can Liberia's MOE Provide to Enable Project Managers Reduce Post-War Project Failure Rates?

Four themes developed from responses obtained were: enforce standards and compliance, strengthen overall project monitoring system, develop technical capacities of local staff, and share knowledge and key documentation with projects. Results from the study revealed that participants' most referenced (12 out of 16) possible support for project managers was: enforce standards and compliance. Participants commented that this support could be provided through ensuring that projects are aligned with the Ministry's plans, duplication of activities for the same targets is prevented, financial provision to project activities is shared, and an organized and effective monitoring system is established. Figure 8 displays the themes identified under support to be provided by the MOE to project managers, and the number of participants whose responses were aligned with each theme.

Figure 8

Summary of Themes About Support to Be Provided by the MOE for Project Managers



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

18. Enforce Standards and Compliance

Participants' Supporting Statements

T02: "Ensure that projects are aligned, do not allow for duplication of activities with the same target groups, reinforce supervision, and ensure that standards are maintained."

T03: "Shared financial provisions for project activities . . . . Organized and effective monitoring system."

T06: "If the system became incentivized based on performance, then the best teachers who are truly making a difference will be able to show themselves and become examples of what a teacher is."

T07: “Such support can include assisting the organization fulfill other statutory obligations.”

T09: “. . . need to provide oversight responsibility to all education projects implemented in all of the education subsectors . . . . Coordinate all activities implemented by subsectors.”

T10: “Computers and internet connectivity, laboratory and library, incentives and motivation packages . . . . Conducive working and child friendly environments.”

T14: “Additionally, in the case of bringing in equipment and supplies for project use, a custom waiver sought on behalf of the project, would greatly help in reducing the cost of project implementation and thereby reduce project failure.”

T16: “Attractive salaries and benefits . . . . Effective and timely evidence-based reporting.”

T17: “Unhindered Professional, collegial, budgetary, logistical, support in a specified time frame as would be enshrined in an agreement for the project or activity.”

T18: “All support required to achieve a given project. However, the Ministry must exhibit the necessary political will.”

T19: “Personally, I would recommend that, before a project can commence, resources must be available.”

19. Strengthen Overall Project Monitoring System

Participants' Supporting Statements

T01: "Maintain and sustain a project progress tracking database to track progress made on results and coverage of support . . . holding regular annual joint education sector reviews with development partners."

T02: "Reinforce supervision and ensure that standards are maintained."

T03: "Organized and effective monitoring system . . . . Organized data gathering system"

T07: "Regular and frequent dialogue regarding the project is necessary to address challenges faced by the project, and taking decisions in a timely manner."

T08: "Urge all partners to provide regular updates on weekly, monthly, or quarterly basis. This will alert and inform the ministry on happenings within the country on educational matters."

T09: ". . . take ownership of the education sector project by conducting effective and regular monitoring all projects."

T14: ". . . provide full moral support to education sector projects"

T20: "To reduce failure, organizations will have to work in line with an M&E framework from the MOE."

20. Develop Technical Capacities of Local Staff

Participants' Supporting Statements

T01: "Welcome … and briefing for new education sector staff arriving in country."

T06: "Completely revamp the teacher training program to become performance-based so that teachers who come out of the teachers' college never want to stop learning."

T10: “Capacity building in educational areas to target concrete skill development.”

T12: “Institutional assistance through consultants . . .”

T13: “. . . time and commitment of all staff to change, hard work, and their own personal learning.”

21. Share Knowledge and Key Documentation with Projects

Participants’ Supporting Statements

T01: “Lessons learnt compiled from past projects in education, and evaluation reports from key projects financed by various donors in country; Education Sector Plan 2017-2021’ Education Sector Analysis (2016); EMIS/School census published over a period of at least 3 years for comparative analysis of education statistics; key contacts for MOE and development partners and MOE organogram; providing regular updates in monthly meetings with development partners on the status of development and implementation of policies . . .”

T10: “Requisite educational materials.”

T16: “Monitoring and knowledge-sharing mechanism.”

T19: “. . . project documents available, and monitoring and evaluation plan available including procurement plan.”

T20: “. . . provide policies and guidelines that partners will use to develop their projects. Fortunately, there exists an education act with relevant documents such as policies and education management regulations. Without these documents partners will find it difficult to streamline their projects.”

Analysis of Research Question 2

The second research question comprised one main question and two sub-questions as follows:

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

RQ2a. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management competences that may be suitable for reducing project failure rates?

RQ2b. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management resources that may be suitable for reducing project failure rates?

These questions were further elaborated into four interview questions that were posed to the participants.

Findings

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

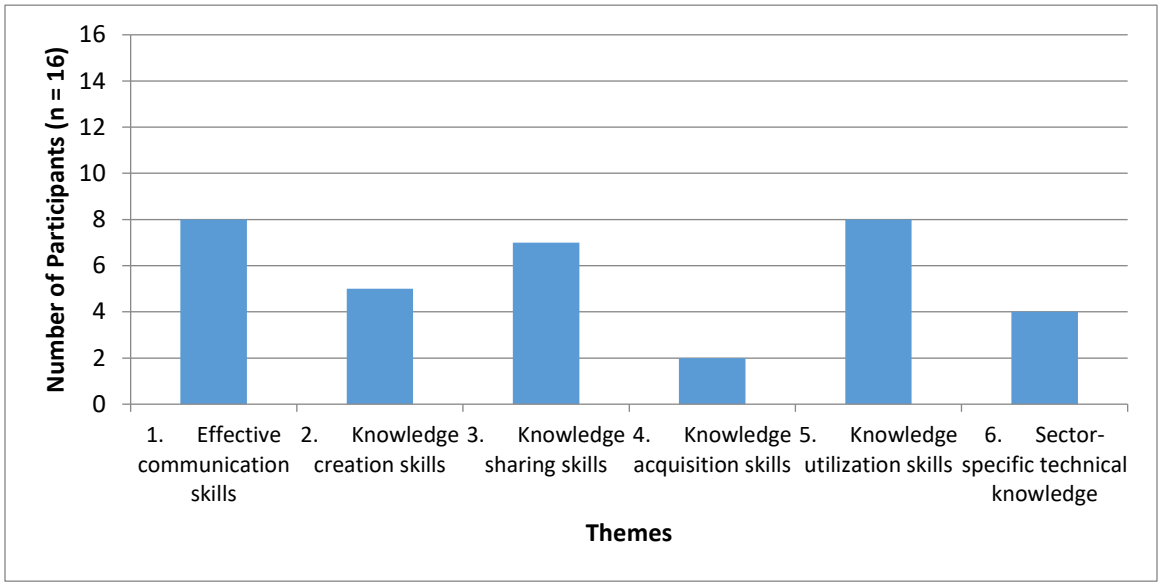
Responses were categorized into 21 major themes for the two sub-questions under RQ2. There were 11 themes for the RQ2a and 10 for RQ2b. The major themes represented core perceptions of the 20 expert project managers who participated in the study. I present analysis of the major themes for each research sub-question of RQ2.

RQ2a. What are the Perceptions of Education Sector Project Managers Working with Liberia's MOE About Knowledge Management Competences That May Be Suitable for Reducing Project Failure Rates?

Eleven themes were developed from responses obtained under RQ2a. The first six themes focusing on KM competences recommended for education sector project managers working with Liberia's MOE to use to reduce project failure were: effective communication skills, knowledge creation skills, knowledge-sharing skills, knowledge acquisition skills, knowledge utilization skills, and sector-specific technical knowledge. Results from the study indicated that KM competences that were referenced most (8 out of 16) by participants as suitable for post-war Liberia's education sector project managers were: effective communication skills, and knowledge utilization skills. Participants indicated that project managers have to be good communicators and have the requisite knowledge and skills to manage projects effectively to reduce post-war project failure. Figure 9 displays the themes identified as KM competences, and the number of participants whose responses were aligned with each theme.

Figure 9

Summary of Themes Identified as Knowledge Management Competences for Project Managers



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

22. Effective Communication Skills

Participants' Supporting Statements

T02: "Having said that, a project manager should be a good communicator, organized, proactive, innovative, and can adapt to change."

T07: "Full knowledge and how to sell the project."

T08: "Radio talk shows should be held at community radio stations on new educational activities taking place in each county to get the community stakeholders involved."

T10: "Leadership and collaboration."

T14: “An understanding of local culture and sometimes national politics may reduce project failure.”

T16: “Community of practice.”

T17: “. . . wide knowledge of the sectoral information, documents, proficiency in writing and speaking of the English language, cooperation, open-mindedness . . .”

T18: “Information dissemination or sharing; respect for, and practices of, sector wide approach.”

23. Knowledge Creation Skills

Participants’ Supporting Statements

T01: “Analytical skills to grasp key learning from past and current projects.”

T02: “Having said that, a project manager should be proactive, innovative and adaptable to change.”

T06: “If there was a way for a project manager to help the decision makers to understand that there are different ways of creating educational systems that may work better for the kids, then this would be fantastic.”

T10: “Planning and Innovation.”

T14: “. . . strong knowledge in planning, organizing and budgeting.”

24. Knowledge-Sharing Skills

Participants’ Supporting Statements

T01: “Ability to consult and convene with development partners to share lessons learnt and draw conclusions through collective and collaborative analysis.”

T03: “Shared financial provision to project activities.”

T06: “It may be a good idea to start to create exchange programs for teachers from other parts of the world.”

T08: “Regular experience sharing meetings with partners within the sector and lessons learned presentations will be held on quarterly basis.”

T16: “Experience sharing and exchanges . . . able to share same with other stakeholders.”

T18: “Information dissemination of sector wide approach.”

T20: “For reliable knowledge management, partners should focus on strengthening the EMIS already established at the MOE. This needs to be done in a decentralized manner through the rolling out of the School Based Record System established with support from the partners.”

25. Knowledge Acquisition Skills

Participants’ Supporting Statements

T03: “Organized and effective monitoring system; organized data gathering system.”

T10: “Monitoring and evaluation.”

26. Knowledge Utilization Skills

Participants’ Supporting Statements.

T02: “. . . should be practical, innovative and able to manage change.”

T03: “Organized data gathering system.”

T10: “Resource management as well as human management.”

T12: “When implementing projects . . .”

T16: “Documenting the processes . . .”

T17: “Adequate and appropriately specified qualification relevant to the discipline and the task at hand, analytical skills . . .”

T19: “. . . financial and PM skills.”

27. Sector-Specific Technical Knowledge

Participants’ Supporting Statements

T11: “Many times there seem to be an unequal level of understanding between project managers thereby denying the project the level of support it would otherwise require. In this light, project managers should be knowledgeable of the project.”

T09: “Education project managers should be trained in education disciplines to enable them better understand the dimensions and indicators of education programs.”

T14: “An advanced degree in education or international development as well as strong knowledge in planning, organizing and budgeting.”

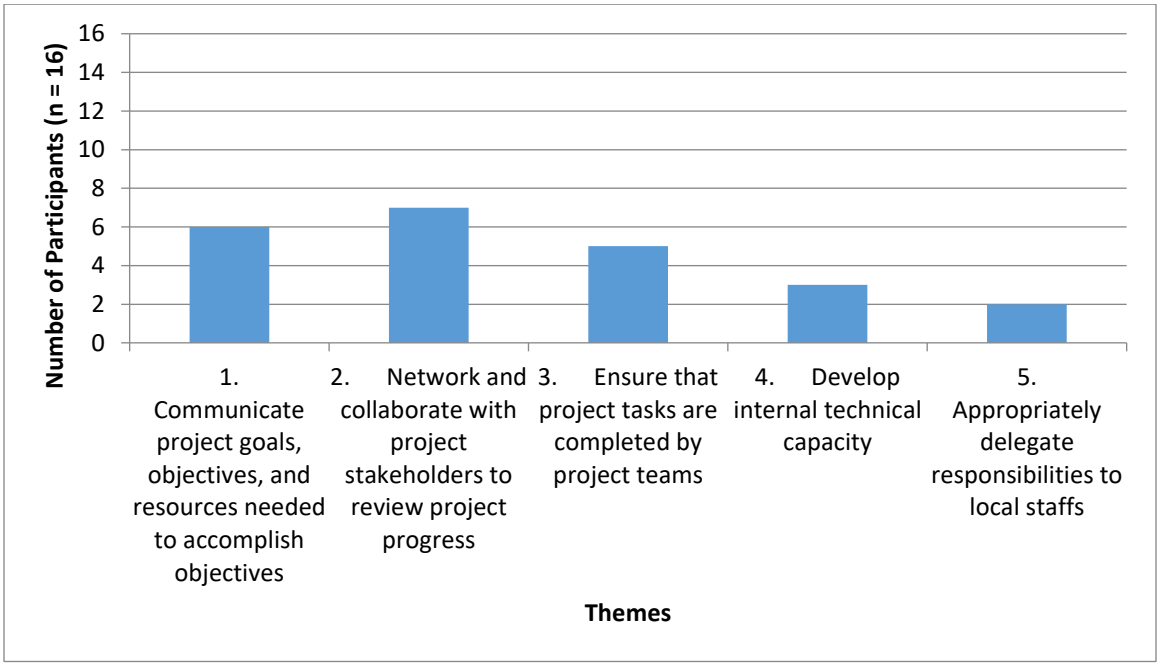
T17: “Adequate and appropriately specified qualification relevant to the discipline and the task at hand, analytical skills, wide knowledge of the sectoral information, documents . . .”

The next five themes under RQ2a focused on how education sector project managers working with Liberia’s MOE may use the KM competences to reduce project failure. The themes were: communicate project goals, objectives, and resources needed to accomplish the objectives, network and collaborate with project stakeholders to review project progress, ensure that project tasks are completed by project teams, develop internal technical capacity, and appropriately delegate responsibilities to local staff. The most referenced strategy indicated by participants (7 out of 16) for project managers to

use the KM competences was: network and collaborate with project stakeholders to review project progress. This could be achieved through engaging stakeholders to constantly review project plans against implementation strategies. Figure 10 displays the themes identified about how project managers may use the KM competences, and the number of participants whose responses were aligned with each theme.

Figure 10

Summary of Themes About How Project Managers May Use Knowledge Management Competences to Reduce Post-War Project Failure



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

28. Communicate Project Goals, Objectives, and Resources Needed to Accomplish Objectives

Participants' Supporting Statements

T02: "The project manager should organize and effectively communicate the project goals and objectives, what resources are available, and what resources are needed to accomplish these objectives."

T03: "It is useful to alert the . . . of gaps that may obstruct the work."

T07: "They should discuss the project with responsible persons . . . outlining its relevance and benefit to the sector."

T13: "They need to train and involve personnel in using knowledge management for planning and operations."

T17: "Be professional, do not adopt superiority complex, be friendly be open to the colleagues, share knowledge and skills where and when required."

T20: "Any information produced is used for whatever happens in the education system . . . this should change."

29. Network and Collaborate with Project Stakeholders to Review Project Progress

Participants' Supporting Statements

T02: "The project manager should organize . . . . This should go along with reviewing and consolidating efforts."

T03: “Encourage constant review of plan against implementation with beneficiaries’ involvement . . . to pay keen attention to recommendations from beneficiaries networking and collaboration.”

T07: “They should garner the necessary support required and ultimately reducing failure.”

T13: “. . . fully funded for ongoing maintenance and updates.”

T14: “A periodic performance appraisal will also help strengthen work culture and ethics and increase productivity, hence, reducing project failure.”

T17: “Be professional . . . respect cultural differences and diverse ideas, concepts, and practices of the colleagues.”

T18: “On the other hand, knowledge management competences usage is applied where projects managers are directly contacted by international partners in education.”

30. Ensure That Project Tasks are Completed by Project Teams

Participants’ Supporting Statements

T10: “They should be acquainted with relevant and up-to-date skills in order to complete their assignments.”

T13: “A several-year project working with MOE personnel at multiple levels (not limited to a monitoring and evaluation unit).”

T14: “This may include on-going professional development in areas of PM and implementation, training in IT skills, report writing, and budget planning. Additionally, project managers may delegate responsibilities gradually so as to allow greater involvement of local staff.”

T19: “Education sector project managers . . . use the knowledge management competences to reduce project failure by carefully implementing the project with the minimum or scarce financial resources wisely.”

T20: “From my experience every stakeholder relies on reports coming from the EMIS.”

31. Develop Internal Technical Capacity

Participants’ Supporting Statements

T10: “Project managers should be acquainted with relevant and up-to-date administrative skills in order to complete their assignments. If project managers are versatile in their managerial endeavors, they will certainly reduce project failure.”

T13: “Project managers need to train and involve MOE personnel in using knowledge management for planning and operations.”

T14: “Project managers can use their knowledge management competences through internal capacity building. This may include on-going professional development in areas of PM and implementation, training in IT skills, report writing, budget planning, etc. additionally, project managers may delegate responsibilities gradually so as to allow greater involvement of local staff.”

32. Appropriately Delegate Responsibilities to Local Staff

Participants’ Supporting Statements

T22: “. . . additionally, project managers may delegate responsibilities gradually so as to allow greater involvement of local staff.”

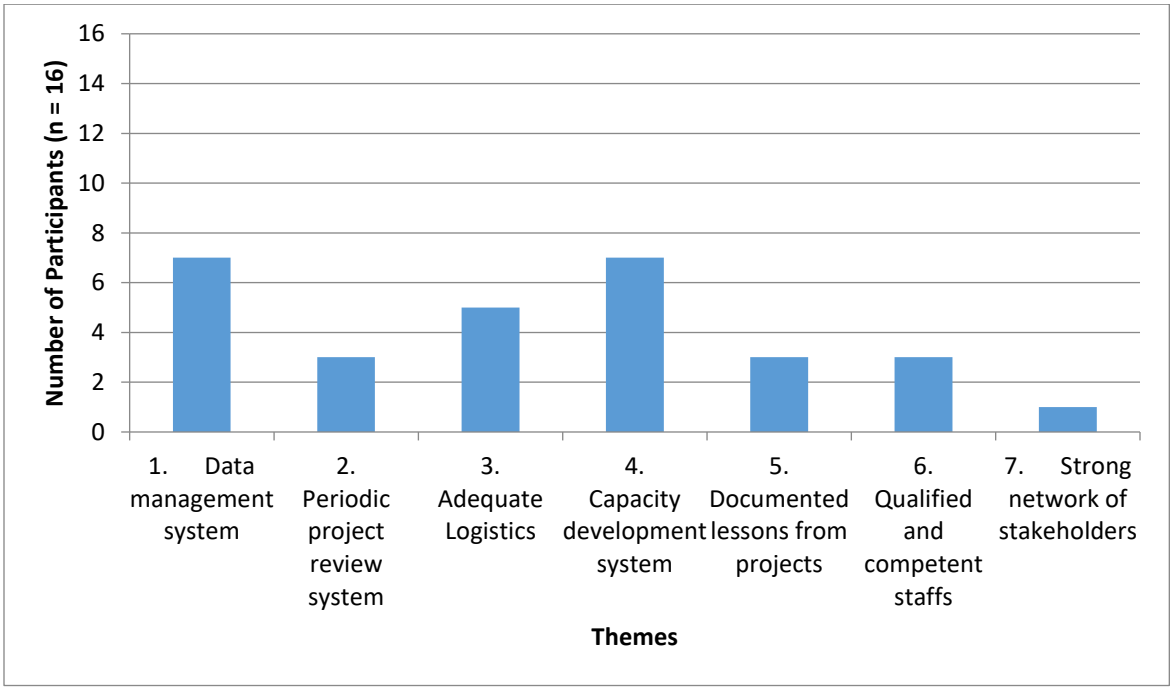
T17: “Be professional; do not adopt superiority complex; be friendly; be open to the colleagues, share knowledge and skills where and when required; respect cultural differences and diverse ideas, concepts, and practices of the colleagues.”

RQ2b. What are the Perceptions of Education Sector Project Managers Working with Liberia’s MOE About Knowledge Management Resources That May Be Suitable for Reducing Project Failure Rates?

Ten themes were developed under RQ2b using responses obtained from the participants. The first seven themes developed were related to KM resources recommended for education sector project managers working with Liberia’s MOE to use to reduce project failure. The themes were: data management system, periodic project review system, adequate logistics, capacity development system, documented lessons from projects, qualified and competent staff, and strong network of stakeholders. Results from the study indicated that the KM resources referenced most by participants (7 out of 16) as suitable for post-war Liberia’s education sector project managers were data management system, and capacity development system. Figure 11 displays the themes identified under KM resources, and the number of participants whose responses were aligned with each theme.

Figure 11

Summary of Themes Related to Knowledge Management Resources Recommended for Project Managers



Participants indicated that project managers have to be good communicators and have the requisite knowledge and skills to manage projects effectively to reduce post-war project failure. Each theme and the supporting statements obtained from participants' responses are detailed as follows:

33. Data Management System

Participants' Supporting Statements

T01: "Access to a database with key documentation on lessons learnt and evaluations compiled from past projects in education and evaluation reports from key projects financed by various donors in the country."

T02: “Create a database to document project implementation successes and challenges.”

T03: “Data management system to include IT experts.”

T16: “Effective and timely evidence-based reporting mechanism.”

T18: “Improved information technology.”

T19: “I would recommend financial, monitoring and evaluation plan and competent human resources for education sector project managers.”

T19: “Provide resources to strengthen the EMIS. This will include hard, soft, and people ware.”

34. Periodic Project Review System

Participants’ Supporting Statements

T02: “Have a periodic review that will inform on the way to move forward.”

T03: “Training in knowledge management techniques like mentoring, inter project review meetings among divisions and departments.”

T16: “Effective and timely evidence-based monitoring and knowledge-sharing mechanism.”

35. Adequate Logistics

Participants’ Supporting Statements

T08: “Logistics: vehicles and motorbikes, Computers and mobile phones.”

T10: “Adequate budget allocations, computers, vehicles for operations and training or capacity building.”

T14: “Reliable sources of funding; Reliable logistical support.”

T19: “I would recommend financial resources for education sector project managers.”

36. Capacity Development System

Participants' Supporting Statements

T03: "Training in knowledge management techniques such as mentoring, inter project review / meetings among divisions and departments."

T08: "Human resource capacity building in real time monitoring; and learning / instructional materials development."

T09: ". . . providing in-service training to build capacities in the education content areas."

T10: "Adequate budget allocations for operations and training or capacity building."

T12: "Journals in knowledge management; e-books; internet / website accessibility; Microsoft project knowledge and training."

T20: ". . . strengthen the EMIS through the school-based recovery support."

37. Documented Lessons from Projects

Participants' Supporting Statements

T01: ". . . documentation on lessons learnt and evaluations compiled from past projects in education, and evaluation reports from key projects financed by various donors in country."

T12: "Publications in knowledge management journals; e-books."

T17: "Education Act; available education policy(ies); education sector plan; vision and mission of the institution."

38. Qualified and Competent Staff

Participants' Supporting Statements

T22: "A qualified and competent project manager . . . . Qualified and competent support staff."

T16: "Requisite skills and trainings."

T19: "I would recommend competent human resources for education sector project managers working with Liberia's MOE to use to reduce project failure."

39. Strong Network of Stakeholders

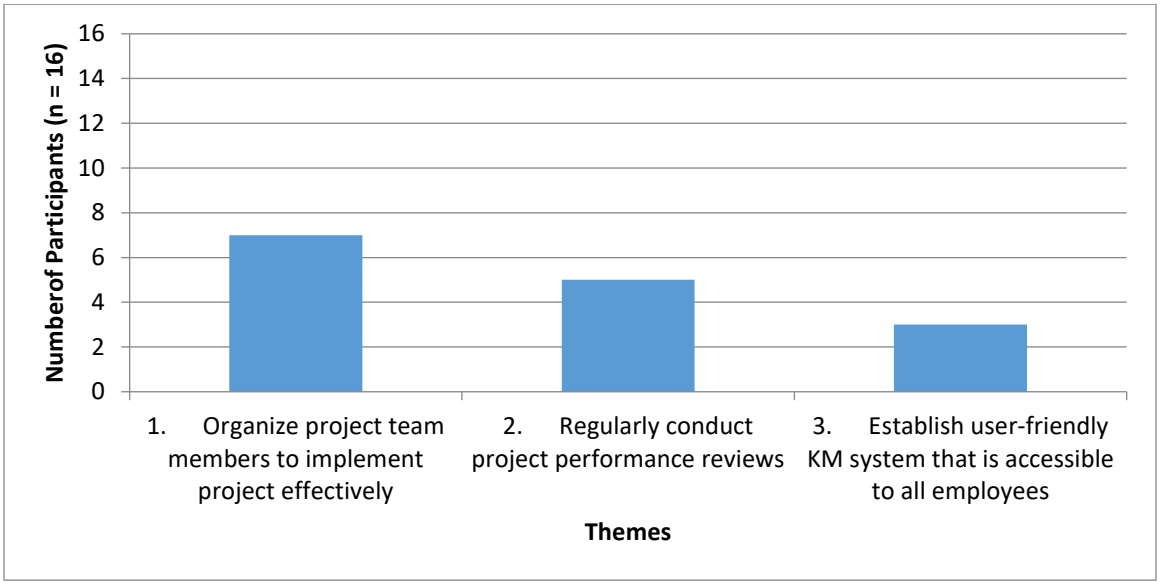
Participants' Supporting Statements.

T14: "A strong network of stakeholders."

The next three themes under RQ2b focused on strategies recommended for education sector project managers working with Liberia's MOE to use the KM resources to reduce project failure. The themes were: organize project team members to implement project effectively, regularly conduct project performance reviews, and establish user-friendly KM system that is accessible to all employees. The most referenced strategy indicated by participants (7 out of 16) for project managers to use the KM resources was: organize project team members to implement project effectively. This could be achieved through instilling the culture of organization among the staff and assigning leads for each task. Figure 12 displays the themes identified as strategies for project managers to use the KM resources, and the number of participants whose responses were aligned with each theme.

Figure 12

Summary of Themes Identified as Strategies to Use Knowledge Management Competences



Each theme and the supporting statements obtained from participants' responses are detailed as follows:

40. Organize Project Team Members to Implement Project Effectively

Participants' Supporting Statements

T03: "Instill a culture of organization and identify leads for each task . . . mentoring."

T10: "Project teams are underperforming because they are not provided with the requisite facilities to enhance performances."

T13: "Project managers need to train and involve . . . personnel in using knowledge management for planning and operations. This needs a full commitment in itself and should not be an add-on to projects with other focuses."

T14: “Provide safe and comfortable working environment for managers and support staff. Funding must be properly utilized, providing allocation for main areas of project implementation. Ensure that project vehicles and other equipment are taken care of properly. Constantly stay in touch with your network. Make known the achievements of the project through publicity and other means. Give recognition to all involved with the project, directly or indirectly.”

T17: “Engage project teams scrupulously in instances where they may be needed / required.”

T18: “… recruit international project managers (NGOs).”

T19: “Education –sector project managers working with Liberia’s MOE can use the knowledge management competences to reduce project failure by carefully implementing the project with the minimum or scarce financial resources efficiently.”

41. Regularly Conduct Project Performance Reviews

Participants’ Supporting Statements

T02: “Have a periodic review of the knowledge management strategy to see what is working and what’s not. Let the knowledge management resources inform your decision.”

T03: “Encourage constant monitoring.”

T13: “A user-friendly knowledge management system that is accessible to all employees and fully funded for ongoing maintenance and updates.”

T14: “Disseminate achievements of the project through meetings and other means.”

T20: “Provide constant feedback to stakeholders. This will put all in the know about projects and relevant suggestions will be articulated and recorded.”

42. Establish User-Friendly KM System That is Accessible to All Employees

Participants’ Supporting Statements

T03: “Constant flow of communication among partners.”

T10: “Also lack of ability to marshal their offices owing to limited academic exposure.”

T13: “. . . a user-friendly knowledge management system that staff can access.”

Classification of Themes

During the next phase of the Delphi survey, expert panel members provided appropriate ratings on a 5-point Likert scale to classify the themes under desirability and feasibility during the second-round, and under importance and confidence during the third-round to be included among strategies to reduce post-war project failure. For each question, an aggregate of Likert scale rating categories selected by the expert panel was determined. Descriptive data (mode and median) were displayed using tables and charts as recommended by Green & Salkind (2011), Subedi (2016) and Toma and Picioreanu (2016). The theme classifications for which consensus was built were noted.

Analysis of Round 2 Themes

Desirability and Feasibility

With reference to each theme developed from the first-round, I posed the following question to participants during the second-round of the Delphi survey: Please provide separate ratings using the 5-point Likert scale below to indicate the extent to which you agree or disagree whether each theme listed under each question is desirable

and whether each theme is feasible to be included in strategies to reduce post-war project failure. Please write numbers only for your separate ratings in the second and third columns respectively where: 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. The Round 2 questionnaire is included in Appendix J. Criteria for consensus rating on each theme were a mode of at least 4, a median of at least 4, and at least three quarters (12 out of 15 for Round 2) of participants rating 4 or 5 on the 5-point Likert type scale. Summaries of participants' theme ratings for each topical area are discussed as follows:

Competency Challenges to Be Addressed for Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Five themes were rated by participants on whether each was desirable and feasible to be addressed as a competency challenge faced by education sector project managers to reduce post-war project failure. The themes were: limited organizational skills, limited technical capability, weak leadership quality, poor project implementation strategies, and unsatisfactory financial management practices. The theme that had highest proportion of participants (12 out of 15) rating at least 4 on desirable was: unsatisfactory financial management practices. On feasibility, the highest proportion of participants who rated at least 4 was 10 out of 15 for limited technical capability, and weak leadership quality. Table 4 displays the mode, the median, and the proportions of participants rating the themes at least 4 on desirable and feasible.

Table 4

Summary of Participants' Ratings on Themes Classified Under Challenges to Be Addressed for Project Managers

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
1: Limited organizational skills	Desirable	4	4	8	FALSE
	Feasible	4	4	8	FALSE
2: Limited technical capability	Desirable	4	4	10	FALSE
	Feasible	4	4	10	FALSE
3: Weak leadership quality	Desirable	4	4	10	FALSE
	Feasible	4	4	10	FALSE
4: Poor project implementation strategies	Desirable	4	4	9	FALSE
	Feasible	4	4	8	FALSE
5: Unsatisfactory financial management practices	Desirable	5	4	12	TRUE
	Feasible	5	4	8	FALSE

Although consensus was reached on desirability for unsatisfactory financial management practices, consensus was not reached on desirability and feasibility for all the themes. Therefore, participants could not reach consensus for the themes developed, indicating that the themes were not desirable and feasible to be addressed as competency challenges faced by education sector project managers to reduce post-war project failure.

Strategies to Overcome Competency Challenges by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Four themes were rated by participants on whether each was desirable and feasible to be included as a strategy for education sector project managers to overcome competency challenges and reduce post-war project failure. The themes were: strengthen

technical capacities of project teams, strengthen organizational structures; improve project planning, implementation, monitoring, and evaluation; and ensure adequate allocation of funds for project activities. All theme ratings for desirable and feasible were a mode of at least 4, and a median of at least 4. The consensus criteria were met on desirability and feasibility for: strengthen technical capacities of project teams, indicating that participants perceived the theme as desirable and feasible to be used as a strategy for education sector project managers to overcome competency challenges and reduce post-war project failure. Consensus criteria were not met for the other three themes on desirability and feasibility. Table 5 displays the mode, the median, and the proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 5

Summary of Participants' Ratings on Themes Classified as Strategies That Project Managers Can Use to Overcome Competency Challenges

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
6: Strengthen technical capacities of project teams	Desirable	4	4	14	TRUE
	Feasible	4	4	15	TRUE
7: Strengthen organizational structures	Desirable	4	4	11	FALSE
	Feasible	4	4	13	TRUE
8: Improve project planning, implementation, monitoring, and evaluation	Desirable	5	5	15	TRUE
	Feasible	4	4	11	FALSE
9: Ensure adequate allocation of funds for project activities	Desirable	4	4	13	TRUE
	Feasible	4	4	11	FALSE

Resources to Be Provided for Project Managers by Organizations Implementing Education Sector Projects in Liberia to Reduce Project Failure

Four themes were rated by participants on whether each was desirable and feasible as a resource to be provided by education sector organizations to enable project managers reduce post-war project failure rates. The themes were: qualified and competent staff, adequate logistics, adequate project funding and time allocation, and shared knowledge from previous projects. Table 6 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 6

Summary of Participants' Ratings on Themes Classified as Resources to Be Provided for Project Managers

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
10: Qualified and competent staff	Desirable	5	5	14	TRUE
	Feasible	4	4	12	TRUE
11: Adequate logistics	Desirable	4	4	14	TRUE
	Feasible	4	4	14	TRUE
12: Adequate project funding and time allocation	Desirable	4	4	15	TRUE
	Feasible	4	4	13	TRUE
13: Shared knowledge from previous projects	Desirable	5	5	14	TRUE
	Feasible	4	4	13	TRUE

Participants' ratings had a mode of at least 4, and a median of at least 4 on desirability and feasibility for the four themes. The consensus criterion of at least three quarters (12 out of 15 for Round 2) of participants rating at least 4 was met for desirability and feasibility by all the participants. The consensus criteria were therefore

met for each theme, indicating that participants perceived the themes to be desirable and feasible as resources to be provided by education sector organizations to enable project managers reduce post-war project failure.

Strategies to Use Resources Provided to Enable Education Sector Project Managers Reduce Project Failure

Four themes were rated by participants on whether each was desirable and feasible as a strategy to use resources provided to enable education sector project managers reduce post-war project failure rates. The themes were: ensure financial compliance and accountability; ensure effective and efficient project implementation, monitoring, and evaluation; use resources to develop capacity of project staff, and ensure effective donor-partner coordination. The theme that had all participants rating at least 4 on desirability was: ensure effective and efficient project implementation, monitoring, and evaluation.

The consensus criteria were met for three of the four themes, indicating that participants perceived the three themes to be desirable and feasible as strategies to use resources provided to enable education sector project managers reduce post-war project failure. Use resources to develop capacity of project staff, did not meet the consensus criteria because participants perceived it as feasible but not desirable to be included as a strategy to use resources provided to enable education sector project managers reduce post-war project failure. Table 7 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 7

Summary of Participants' Ratings on Themes Classified as Strategies to Use Resources Provided to Enable Project Managers Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
14: Ensure financial compliance and accountability	Desirable	5	5	14	TRUE
	Feasible	4	4	12	TRUE
15: Ensure effective and efficient project implementation, monitoring, and evaluation	Desirable	5	5	15	TRUE
	Feasible	4	4	12	TRUE
16: Use resources to develop capacity of project staff	Desirable	4	4	9	FALSE
	Feasible	4	4	12	TRUE
17: Ensure effective donor-partner coordination	Desirable	5	4	13	TRUE
	Feasible	4	4	12	TRUE

Support to be Provided by the MOE to Enable Organizations Implementing Education Sector Projects in Liberia to Reduce Project Failure

Four themes were rated by participants on whether each was desirable and feasible support to be provided by the MOE to enable education sector organizations to reduce post-war project failure rates. The themes were: enforce standards and compliance, strengthen overall project monitoring system, develop technical capacities of local staff, and share knowledge and key documentation with projects. The ratings for all four themes had a median of at least 4 on desirability and feasibility. However, the consensus criteria were not met for each of the themes. Participants perceived the themes as desirable but not feasible support to be provided by the MOE to enable organizations

implementing education sector projects to reduce post-war project failure. Table 8 displays the mode, median, and proportion of participants rating the themes at least 4 on desirable and feasible.

Table 8

Summary of Participants' Ratings on Themes Classified Under Support to Be Provided by the MOE to Enable Organizations to Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
18: Enforce standards and compliance	Desirable	4	4	13	TRUE
	Feasible	3	4	10	FALSE
19: Strengthen overall project monitoring system	Desirable	5	5	14	TRUE
	Feasible	3	4	8	FALSE
20: Develop technical capacities of local staff	Desirable	5	5	14	TRUE
	Feasible	4	4	11	FALSE
21: Share knowledge and key documentation with projects	Desirable	5	4	13	TRUE
	Feasible	4	4	10	FALSE

Knowledge Management Competences Recommended for Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Six themes were rated by participants on whether each was desirable and feasible as a KM competence to be used by project managers to reduce post-war project failure rates. Themes were: effective communication skills, knowledge creation skills, knowledge-sharing skills, knowledge acquisition skills, knowledge utilization skills, and sector-specific technical knowledge. Participants' ratings had a mode of at least 4, and a median of at least 4 on desirability and feasibility for all the themes except for knowledge creation skills. The consensus criteria were met for three themes, indicating that

participants perceived the three themes to be desirable and feasible as KM competences to be used by project managers to reduce post-war project failure. Although knowledge utilization skills were perceived by participants as desirable but not feasible, knowledge creation skills, and knowledge acquisition skills were neither perceived as desirable nor feasible as KM competences recommended to enable project managers reduce post-war project failure. Table 9 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 9

Summary of Participants' Ratings on Themes Classified as Knowledge Management Competences to Enable Project Managers Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
22: Effective	Desirable	5	4	14	TRUE
communication skills	Feasible	4	4	13	TRUE
23: Knowledge	Desirable	3	4	9	FALSE
creation skills	Feasible	3	3	7	FALSE
24: Knowledge-sharing	Desirable	4	4	14	TRUE
skills	Feasible	4	4	12	TRUE
25: Knowledge	Desirable	4	4	11	FALSE
acquisition skills	Feasible	4	4	11	FALSE
26: Knowledge	Desirable	4	4	14	TRUE
utilization skills	Feasible	4	4	11	FALSE
27: Sector-specific	Desirable	4	4	13	TRUE
technical knowledge	Feasible	4	4	12	TRUE

Strategies to Use Knowledge Management Competences by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Four themes were rated by participants whether each was desirable and feasible as a strategy for Liberia's education sector project managers to use KM competences to reduce post-war project failure rates. The themes were: communicate project goals, objectives, and resources needed to accomplish objectives; network and collaborate with project stakeholders to review project progress, ensure that project tasks are completed by project teams, develop internal technical capacity, and appropriately delegate responsibilities to local staff. Participants' ratings had a mode of at least 4, and a median of at least 4 on desirability and feasibility for all the themes except for: develop internal technical capacity. The consensus criteria were met for two themes, indicating that participants perceived the themes to be desirable and feasible as strategies to use KM competences to reduce post-war project failure. Participants perceived the three themes as desirable but not feasible to be included in strategies to use KM competences to reduce post-war project failure. Table 10 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 10

Summary of Participants' Ratings on Themes Classified as Strategies to Use Knowledge Management Competences to Reduce Post-War Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
28: Communicate project goals, objectives, and resources needed to accomplish objectives	Desirable	5	5	14	TRUE
	Feasible	5	5	13	TRUE
29: Network and collaborate with project stakeholders to review project progress	Desirable	4	4	12	TRUE
	Feasible	5	4	12	TRUE
30: Ensure that project tasks are completed by project teams	Desirable	5	5	12	TRUE
	Feasible	4	4	10	FALSE
31: Develop internal technical capacity	Desirable	4	4	13	TRUE
	Feasible	3	3	7	FALSE
32: Appropriately delegate responsibilities to local staff	Desirable	5	5	14	TRUE
	Feasible	4	4	11	FALSE

Knowledge Management Resources Recommended for Education Sector Project Managers Working with Liberia's MOE to Use to Reduce Project Failure

Seven themes were rated by participants on whether each was desirable and feasible to be used as a KM resource by project managers to reduce post-war project failure rates. The themes were: data management system, periodic project review system, adequate logistics, capacity development system, documented lessons from projects, qualified and competent staff, and strong network of stakeholders. Participants' ratings had a mode of at least 4, and a median of at least 4 on desirability and feasibility for all the themes. The consensus criteria were met for four themes, indicating that participants

perceived the four themes as desirable and feasible to be used as KM resources to reduce post-war project failure. Three themes did not meet the consensus criteria because participants perceived them as desirable but not feasible to be used as KM resources to reduce post-war project failure. Table 11 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 11

Summary of Participants' Ratings on Themes Classified as Knowledge Management Resources to Be Used by Project Managers to Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
33: Data management system	Desirable	4	4	14	TRUE
	Feasible	4	4	12	TRUE
34: Periodic project review system	Desirable	5	5	15	TRUE
	Feasible	4	4	14	TRUE
35: Adequate Logistics	Desirable	4	4	13	TRUE
	Feasible	5	4	10	FALSE
36: Capacity development system	Desirable	4	4	15	TRUE
	Feasible	4	4	13	TRUE
37: Documented lessons from projects	Desirable	5	5	15	TRUE
	Feasible	5	4	12	TRUE
38: Qualified and competent staff	Desirable	5	4	14	TRUE
	Feasible	4	4	11	FALSE
39: Strong network of stakeholders	Desirable	5	5	15	TRUE
	Feasible	5	5	11	FALSE

Strategies to Use Knowledge Management Resources by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Three themes were rated by participants on whether each was desirable and feasible as a strategy for education sector project managers to use KM resources to reduce post-war project failure rates. The themes were: organize project team members to implement project effectively, regularly conduct project performance reviews, and establish user-friendly KM system that is accessible to all employees. Participants' ratings had a mode of at least 4, and a median of at least 4 on desirability and feasibility for all the themes. Table 12 displays the mode, median, and proportion of participants rating the themes at least 4 on desirability and feasibility.

Table 12

Summary of Participants' Ratings on Themes Classified as Strategies for Project Managers to Use Knowledge Management Resources to Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
40: Organize project team members to implement project effectively	Desirable	5	5	13	TRUE
	Feasible	4	4	11	FALSE
41: Regularly conduct project performance reviews	Desirable	5	5	13	TRUE
	Feasible	4	4	12	TRUE
42: Establish user-friendly KM system that is accessible to all employees	Desirable	4	4	13	TRUE
	Feasible	4	4	11	FALSE

Whereas 34 of the 42 themes were perceived as desirable by participants, 20 were perceived as feasible, 16 as desirable but not feasible to be used as strategies to reduce post-war project failure. Two themes were perceived as feasible but not desirable, and 18 as desirable and feasible. The 18 themes selected through consensus and listed in Appendix Q represented themes recommended by the participants as desirable and feasible to be included in management strategies and KM principles for reducing post-war project failure rates.

Analysis of Round 3 Themes

Importance and Confidence

Based on the 18 themes for which consensus was built during Round 2, I posed the following question to participants during the third-round of the Delphi survey: Please provide separate ratings using the 5-point Likert scale below to indicate the extent to which you agree or disagree whether each theme listed under each question is of importance (in the second column), and whether you have confidence (in the third column) for each theme be included in strategies to reduce post-war project failure. Please write numbers only for your separate ratings in the second and third columns respectively where: 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. The Round 3 questionnaire is included in Appendix L. Criteria for consensus rating on each theme were a mode of at least 4, a median of at least 4, and at least three quarters (11 out of 14 for round 3) of participants rating 4 or 5 on the 5-point Likert type scale. Summaries of participants' theme ratings under each topical area for Round 3 are outlined as follows:

Strategy to Overcome Competency Challenges by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

The theme: strengthen technical capacities of project teams, was rated by participants on importance and confidence to be included in strategies for education sector project managers to overcome competency challenges and reduce post-war project failure. Ratings provided by all participants for importance and confidence had a mode of at least 4, and a median of at least 4. The consensus criteria were met for the theme, indicating that participants perceived the theme as important and with confidence to be used as a strategy for education sector project managers to overcome competency challenges and reduce post-war project failure. Table 13 displays the mode, the median, and the proportion of participants rating the themes at least 4 on importance and confidence.

Table 13

Summary of Participants' Ratings on Strengthening Technical Capacities of Project Teams to Overcome Competency Challenges

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
6: Strengthen technical capacities of project teams	Importance	5	4.5	14	TRUE
	Confidence	4	4.0	11	TRUE

Resources to be Employed by Organizations Implementing Education Sector Projects in Liberia to Enable Project Managers to Reduce Project Failure

Four themes were rated by participants on importance and confidence as resources to be employed by education sector organizations to enable project managers reduce post-war project failure rates. The themes were: qualified and competent staff, adequate logistics, adequate project funding and time allocation, and shared knowledge from previous projects. Participants' ratings had a mode of at least 4, a median of at least 4 on importance and confidence for all the themes except for: adequate logistics. Table 14 displays the mode, median, and proportion of participants rating the themes at least 4 on importance and confidence.

Table 14

Summary of Participants' Ratings on Themes Rated as Resources to Be Provided for Project Managers

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
10: Qualified and competent staff	Importance	5	4.5	13	TRUE
	Confidence	4	4	9	FALSE
11: Adequate logistics	Importance	3	4	9	FALSE
	Confidence	5	4	8	FALSE
12: Adequate project funding and time allocation	Importance	4	4	12	TRUE
	Confidence	5	4	9	FALSE
13: Shared knowledge from previous projects	Importance	4	4	13	TRUE
	Confidence	5	4	9	FALSE

The consensus criteria were not met for all the themes, indicating that participants did not perceive the themes concurrently as important and with confidence as resources to be

employed by education sector organizations to enable project managers reduce post-war project failure.

Strategies to Use Resources Provided to Enable Education Sector Project Managers Reduce Project Failure

Three themes were rated by participants on importance and confidence as strategies to use resources provided to enable education sector project managers reduce post-war project failure rates. The themes were: ensure financial compliance and accountability, ensure effective and efficient project implementation, monitoring, and evaluation; and ensure effective donor-partner coordination. Participants' ratings had a mode of at least 4, and a median of at least 4 on importance and confidence for all three themes. The consensus criteria were met for all three themes, indicating that participants perceived the themes as important and with confidence as strategies for resources to be used by education sector project managers to reduce post-war project failure. Table 15 displays the mode, median, and proportion of participants rating the themes at least 4 on importance and confidence.

Table 15

Summary of Participants' Ratings on Themes Developed as Strategies to Use Resources Provided to Enable Project Managers Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
14: Ensure financial compliance and accountability	Importance	4	4	13	TRUE
	Confidence	5	4.5	12	TRUE
15: Ensure effective and efficient project implementation, monitoring, and evaluation	Importance	5	5	14	TRUE
	Confidence	5	4	12	TRUE
17: Ensure effective donor-partner coordination	Importance	5	4.5	13	TRUE
	Confidence	5	4.5	12	TRUE

Knowledge Management Competences Recommended for Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Three themes were rated by participants on importance and confidence to be included as KM competences required to enable project managers reduce post-war project failure rates. The themes were: effective communication skills, knowledge-sharing skills, and sector-specific technical knowledge. Participants' ratings had a mode of at least 4, and a median of at least 4 on importance and confidence for all the themes. The consensus criteria were met for all three themes, indicating that participants perceived the themes as important, and with confidence as KM competences to be used by project managers to reduce post-war project failure. Table 16 displays the mode, median, and proportion of participants rating the themes at least 4 on importance and confidence.

Table 16

Summary of Participants' Ratings on Themes Developed as Knowledge Management Competences to Enable Project Managers Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
22: Effective	Importance	4	4	14	TRUE
communication skills	Confidence	4	4	13	TRUE
24: Knowledge-sharing	Importance	4	4	12	TRUE
skills	Confidence	4	4	11	TRUE
27: Sector-specific	Importance	5	4	11	TRUE
technical knowledge	Confidence	4	4	11	TRUE

Strategies to Use Knowledge Management Competences by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

Two themes were rated by participants on importance and confidence as strategies for KM competences to be used by education sector project managers to reduce post-war project failure rates. The themes were: communicate project goals, objectives, and resources needed to accomplish objectives; and network and collaborate with project stakeholders to review project progress. Participants' ratings had a mode of at least 4, and a median of at least 4 on importance and confidence for the two themes. The consensus criteria were met for the two themes, indicating that participants perceived the themes as important and with confidence as strategies to use KM competences to reduce post-war project failure. Table 17 displays the mode, median, and proportion of participants rating the themes at least 4 on importance and confidence.

Table 17

Summary of Participants' Ratings on Themes Developed as Strategies to Use Knowledge Management Competences to Reduce Post-War Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
28: Communicate project goals, objectives, and resources needed to accomplish objectives	Importance	4	4	11	TRUE
	Confidence	4	4	13	TRUE
29: Network and collaborate with project stakeholders to review project progress	Importance	4	4	11	TRUE
	Confidence	4	4	11	TRUE

Knowledge Management Resources Recommended for Education Sector Project Managers Working with Liberia's MOE to Use to Reduce Project Failure

Four themes were rated by participants on importance and confidence to be used as KM resources to enable project managers reduce post-war project failure rates. The themes were: data management system, periodic project review system, capacity development system, and documented lessons from projects. Participants' ratings had a mode of at least 4, and a median of at least 4 on importance and confidence for all the themes except for: data management system, and capacity development system. The consensus criteria were not met for the four themes, indicating that participants perceived the themes neither as important nor with confidence to be used as KM resources to reduce post-war project failure. Table 18 displays the mode, median, and proportion of participants rating the themes at least 4 on importance and confidence.

Table 18

Summary of Participants' Ratings on Themes Developed Under Knowledge Management Resources to Be Used by Project Managers to Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
33: Data management system	Importance	5	4	10	FALSE
	Confidence	3	4	8	FALSE
34: Periodic project review system	Importance	5	4.5	12	TRUE
	Confidence	4	4	9	FALSE
36: Capacity development system	Importance	4	4	10	FALSE
	Confidence	3	3.5	7	FALSE
37: Documented lessons from projects	Importance	4	4	12	TRUE
	Confidence	5	4	10	FALSE

Strategy to Use Knowledge Management Resources by Education Sector Project Managers Working with Liberia's MOE to Reduce Project Failure

The theme: regularly conduct project performance reviews, was rated by participants on importance and confidence as a strategy for education sector project managers to use KM resources to reduce post-war project failure rates. Participants' ratings had a mode and median of 4 on each of importance and confidence for the theme. The consensus criteria were not met for the theme because participants perceived the theme as important, but not with confidence, to be used as a KM resource to reduce post-war project failure. Table 19 displays the mode, median, and proportion of participants rating the theme at least 4 on importance and confidence.

Table 19

Summary of Participants' Ratings on Themes Developed as Strategies for Project Managers to Use Knowledge Management Resources to Reduce Project Failure

Theme	Theme classification	Mode	*Mdn*	Number rating at least 4	Consensus reached
41: Regularly conduct	Importance	4	4	11	TRUE
project performance reviews	Confidence	4	4	10	FALSE

Even though 15 of the 18 themes were perceived as important by participants, nine were perceived with confidence, and six without confidence to be used as strategies to reduce post-war project failure. Three themes were neither perceived as important nor with confidence to be used as strategies to reduce post-war project failure. The nine themes selected through consensus therefore represented themes recommended by the participants as desirable, feasible, important and with confidence to be included as management strategies and KM principles for reducing post-war project failure rates. Appendix R outlines the themes for which participants built consensus for desirability, feasibility, importance, and confidence.

Discrepant Cases and Nonconforming Data

Discrepant cases in the data were marginal. All responses provided in the questionnaires were reviewed by me to classify the perceptions of the participants. There were similarities among participants' responses to most of the questions.

Summary

Forty-two themes were developed under RQ1 using qualitative responses provided by participants. Consensus was built by participants for 18 themes as desirable and feasible to be included in strategies that education sector project managers working with Liberia's MOE can implement to reduce project failure rates. Participants further built consensus for nine of the 18 themes on importance and confidence to use the themes as strategies that education sector project managers working with Liberia's MOE can implement to reduce project failure. The nine themes for which consensus was built are outlined follows for each research question.

RQ1. What are the perceptions of education sector project managers working with Liberia's Ministry of Education (MOE) about strategies to implement to reduce project failure rates?

1. Strengthen technical capacities of project teams.
2. Ensure financial compliance and accountability.
3. Ensure effective and efficient project implementation, monitoring, and evaluation.
4. Ensure effective donor-partner coordination.

RQ2. What are the perceptions of education sector project managers working with Liberia's MOE about knowledge management principles that may be suitable for reducing project failure?

5. Effective communication skills.
6. Knowledge-sharing skills.

7. Sector-specific technical knowledge.
8. Communicate project goals, objectives, and resources needed to accomplish objectives.
9. Network and collaborate with project stakeholders to review project progress.

I outlined the study findings in Chapter 4. Discussions on interpretations of the findings, recommendations made for actions, implications for social change, and recommendations made for future research are discussed in Chapter 5. Conclusions drawn from the study results are outlined in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative case study was to explore management strategies and KM principles that project managers working with Liberia's MOE can use to reduce project failure rates. The study results may contribute to PM practice by providing managers of donor-funded international development projects with information about how to improve post-war project planning, implementation, monitoring, and evaluation. I examined competencies and resources for PM and KM that may be applied within the post-war context to reduce project failure.

Although six of the 18 themes selected through the Delphi survey rounds were perceived by project managers as important but without confidence to be used as strategies to reduce post-war project failure, three themes were not perceived with confidence and were not perceived as important to reduce post-war project failure. Based on consensus built during the study, project managers perceived as desirable, feasible, important, and with confidence nine themes as strategies to reduce post-war project failure. The themes were: strengthen technical capacities of project teams, ensure financial compliance and accountability, ensure effective and efficient project implementation, monitoring, and evaluation; ensure effective donor-partner coordination, effective communication skills, knowledge-sharing skills, sector-specific technical knowledge; communicate project goals, objectives, and resources needed to accomplish objectives; and network and collaborate with project stakeholders to review project progress.

Interpretation of Findings

In this section I interpret the themes in relation to the PM strategies and KM principles identified in the literature. For each research question, I review themes perceived by the participants as desirable, feasible, important, and with confidence to reduce project failure. I also compare and contrast findings with information from the literature about PM strategies and KM principles that can be used to reduce post-war project failure.

Project Management Strategies

The literature review revealed that PM effectiveness dynamics include strategies that enhance organizational structure, technical capability, leadership quality, and project success (Jiang, 2014; Todorović et al., 2013). All four themes under Research Question 1 were consistent with findings obtained from the literature. The themes were: strengthen technical capacities of project teams, ensure financial compliance and accountability, ensure effective and efficient project implementation, monitoring, and evaluation; and ensure effective donor-partner coordination. Participants' comments under each theme also confirmed findings by researchers in previous studies. I present classification of the themes under strategy for competency enhancements needed by project managers, and strategies to use resources employed to enable project managers reduce post-war project failure as recommended by the participants.

Strategy for Competency Enhancements Needed by Project Managers

The strategy for competency enhancements recommended by the participants to reduce post-war project failure was: strengthen technical capacities of project teams. Participants proposed procedures for the technical capacity strengthening processes as training, mentoring, coaching, and recruitment of skilled personnel for project-related tasks assigned to project team members. According to Nimely and Jappah (2015), strengthening technical capacities enables project teams to improve project planning, implementation, monitoring, and evaluation. S. R. Khan et al. (2014) posited that project planning, communication, and information management were technical capacities that project managers could use to reduce project failure rates. Chauvet et al. (2010) established that a project team with competent technical capability is indispensable for project success. The current participants' recommendations were consistent with findings from the literature that enhancing technical capacities of project teams in project planning, implementation, monitoring, and evaluation could reduce post-war project failure.

Strategies to Use Project Management Resources Needed by Project Managers

Strategies recommended by the participants to use PM resources to reduce project failure were: ensure financial compliance and accountability, ensure effective and efficient project implementation, monitoring, and evaluation; and ensure effective donor-partner coordination. Nimely and Jappah identified weaknesses in project planning, monitoring, supervision, and evaluation as key capacity challenges experienced by project managers implementing projects for the MOE. On the other hand, the PMI

(2013a) posited that project managers have authority to manage required resources to improve accountability and track project activities. In concurrence with the PMI (2013a), Kissi and Ansah (2014) indicated that when project managers share actions, strategies, and goals with all stakeholders, achievement of project outcomes is facilitated and project budgets are not placed at risk. These findings are consistent with recommendations made by project managers who participated in my study. The recommendations align with the position of Ebbesen and Hope (2013) that projects are rated as successful when completed according to scheduled periods, implemented within budgetary expectations, and satisfying stakeholders' anticipations.

Knowledge Management Principles

According to Gholami et al. (2013) and Young et al. (2010), KM principles that organizations could use to improve performance and increase competitiveness on the market to reduce project failure include knowledge creation, knowledge acquisition, knowledge storage, and knowledge utilization. Five themes representing three KM competences and two strategies about how KM competences could be used to reduce post-war project failure were recommended under RQ2 by the participants. The KM competences were: effective communication skills, knowledge-sharing skills, and sector-specific technical knowledge. The strategies suggested about how the competences could be used were: communicate project goals, objectives, and resources needed to accomplish the objectives; and network and collaborate with project stakeholders to review project progress. Recommendations from my study are consistent with the position of the PMI (2013b) that formal and informal communication strategies are required to address

deviations in project performance within complex environments. Jiang (2014) described communication as a core competency that could connect every project team member to a common set of actions, strategies, and goals. The literature revealed that promoting communication among project staff and stakeholders by project managers could positively influence project performance and reduce project failure (Jiang, 2014; S. R. Khan et al., 2014). The PMI (2013b) posited that continuous communication should be maintained among project stakeholders based on their information needs and to support management of service providers working with the project. Reddy and Kannamani (2015) asserted that poor communication between project managers and functional managers can leave project teams in a state of confusion.

Kissi and Ansah established that when project-specific actions, strategies, and goals are shared effectively by project leaders and understood by all stakeholders, achievement of project outcomes is facilitated and project budgets are not placed at risk. Recommendations made by project managers who participated in my study suggested that sharing sector-specific technical knowledge with stakeholders involved in a project implemented within Liberia's post-war environment should be open and honest, written and verbal, formal and informal to ensure timely products delivery and reduce project failure. According to Bhatti et al. (2011), internal and external knowledge can be shared within an organization to improve its performance by actively engaging the middle management staff to develop a knowledge-sharing culture. In concurrence, Gholami et al., OuYang (2015), and Young et al. demonstrated that organizational leaders could improve organizational performance through knowledge sharing. Whereas KM can help

companies to gain competitive advantage, KM is not about managing knowledge intrinsically but rather about managing and creating a knowledge-sharing culture (Kukko, 2013).

Recommendations made by participants in my study implored project managers to be fully knowledgeable of their projects because there seemed to be unequal levels of understanding between project managers and their organizations thereby denying the projects the level of support otherwise required. Confirming the recommendations, Nimely and Jappah indicated that lessons learned from previous projects were not adequately shared with successive projects to improve implementation strategies due to underdeveloped monitoring and evaluation systems for projects implemented within the Liberian education sector. Frinsdorf et al. (2014) indicated that evidence from an organization's past performance and engagements with competitors would enhance development of strategies to implement project activities. Recommendations made by my study participants were consistent with Frinsdorf et al. and the PMI (2015) that knowledge shared by project teams through effective communication paths promotes faster decision-making, and focuses resources on project objectives with full attention to tasks.

Conceptual Framework Alignment

The conceptual framework for this study was derived from the RBV of organizations (Penrose, 1959, as cited in Truijens, 2003), and the KBV of organizations (Grant, 1996; Mbhalati, 2012). The RBV focuses on an organization's internal resources and provides insights on strategic and organizational issues (Almari & Gardiner, 2014;

Penrose, 1959, as cited in Truijens, 2003). According to Wernerfelt (1984), an organization's resources could be tangible such as location, capital, and equipment; or intangible such as entrepreneurial orientation, reputation, knowledge, and skills. Project management strategies recommended by participants in my study emphasized strengthening the technical capacities of project teams, as a strategic human resource, to reduce post-war project failure. Barney (1991) posited that capital resources can be categorized into three groupings namely physical capital, human capital, and organizational capital. Physical capital resources refer to non-human assets used for production (Barney, 1991). Examples include machines and buildings. Human capital resources such as competencies, experiences, viewpoints, connections, and insights represent employees' collective efforts to deliver business products through application of knowledge, skills, and expertise (Ting, 2012; Zehri et al., 2012). Ensuring effective and efficient project implementation, monitoring, and evaluation by qualified and competent staff as recommended by the participants in my study conforms to the assertions of Ting and Zehri et al. about productive efforts to deliver an organization's expected deliverables.

Organizational capital resources refer to processes and systems such as culture, official reporting structure, and reputation on the market (Silvius & Schipper, 2014; Zehri et al., 2012). Consensus was built by my research participants that ensuring financial compliance and accountability of resources entrusted to an organization enhances the organization's reputation and improves effectiveness of donor-partner coordination. This supports the positions of Silvius and Schipper and Zehri et al., and demonstrates how

organizational capital resources could be used within the post-war context to reduce project failure. Resources are the basis of RBV and can be a representation of performance differences among organizations (Netland & Aspelund, 2013). Gaya et al. (2013) posited that the quality of resources demonstrates why organizations possessing certain echelons of competitive advantage obtain higher returns.

With KBV an organization's management team creates value by championing efficient knowledge creation and transmission (Nickerson & Zenger, 2004). Effective communication skills and knowledge-sharing skills were two competences recommended by the participants to enable project managers reduce post-war project failure. The recommendation synchronizes with Nickerson and Zenger within the context of the KBV. Grant (1997) and Mbhalati agreed that knowledge-based resources were the most strategically important, socially intricate, and typically challenging resources to replicate within an organization under the KBV. This position of Grant (1997) and Mbhalati confirmed the recommendation made by participants in my study that a key competence to enable project managers reduce post-war project failure is: sector-specific technical knowledge. Sector-specific technical knowledge would therefore be a knowledge-based resource that organizations can use to improve project implementation within the post-war context.

According to Van Reijsen et al. (2014), formal adoption of KM policies by an organization produces more impact on the organization's dynamic capability than can be achieved with social capital. From the participants' perspectives, organizational leaders can communicate project goals, objectives, and resources needed to accomplish

objectives to the project teams as the organization's attributes that can be used to reduce project failure. Principal factors of an organization's sustained competitive advantage resulting in continuous superior business performance are its diverse knowledge resources and capabilities (Afzal & Afzal, 2014). Networking with project stakeholders to review project progress as recommended by the participants in my study aligns with using diverse knowledge resources and capabilities to establish competitive advantage and superior business performance. Theories of organizations propounded by researchers consist of concepts and models that clarify and predict structures and behaviors of business enterprises. According to Sokhanvar et al. (2014), integrating KM principles in PM practices facilitates organizational performance improvement and reduces project failure. The RBV and the KBV can be aligned with the results of my study about using applicable management strategies and KM principles to manage post-war projects effectively and reduce project failure.

Limitations of the Study

As indicated in Chapter 1, limitations of this study are varied. Data collected using purposeful sampling from 20 education sector project managers do not represent the perceptions of all project managers working within the education sector. The relatively small sample size limits applicability of the results on a broader scale in post-war Liberia. The perceptions of non-management staff working within the project managers' organizations were not explored in this study. Other factors may have influenced perceptions of the project managers regarding management strategies and KM principles that can be used to reduce post-war project failure. These factors may include

policies, working relations, and actual occurring practices among organizations that work with Liberia's MOE. The study did not review age group or gender dimensions of responses provided even though each participant was at least 18 years old which also constitutes a limitation. The applicability of management strategies and KM principles in different organizational structures (functional, projectized, matrix, and composite) was not investigated during the study. Findings obtained could be influenced by project managers working within 1 type of organizational structure. The study principally focused on management strategies and KM principles that could be used to reduce post-war project failure whereas other dynamics may cause projects to fail within post-war Liberia and generally within the post-war context. Predictions made do not guarantee any results. Researchers will have to test and confirm conclusions drawn from the study.

Recommendations

Based on the literature review and findings obtained from this study, there remains the need for further research on management strategies and KM principles that can be used reduce post-war project failure. I recommend additional research on strategies to reduce project failure rates within the post-war context because existing literature focused extensively on strategies to reduce project failure in contexts other than post-war. Project managers participating in this study perceived that it was important to strengthen technical capacities of project teams through training, mentoring, exchange programs, and hands-on activities for effective PM toward reducing project failure in Liberia. In future studies, I recommend engagement of managers who work within

sectors other than education to provide information about how technical capacities of project teams could be strengthened to effectively manage their projects.

A potential focus for future study could be on organizations that work within the post-war private sector to investigate how project managers obtain support from their organizations to manage their projects. In addition, future studies could compare the applicability of management strategies and KM principles within functional, projectized, matrix, and composite organizational structures to reduce post-war project failure. Engagement of KM professionals is not common practice within organizations employing the project managers interviewed. This was evident in responses provided by the project managers, especially responses about how KM principles could be applied to improve PM effectiveness within Liberia's post-war context. Thus, future research could focus on factors influencing engagement of KM professionals and use of KM competences in post-war PM to reduce project failure. Another study can focus on societal benefits of reduced post-war project failure rates as a result of using tactical management strategies and KM principles to manage projects.

It is remarkable for organizational leaders to provide project managers and project teams with knowledge and training on the themes identified by the participants in my study as feasible, desirable, important, and with confidence to be used as strategies to reduce post-war project failure in Liberia. With 100% rating agreed or strongly agreed, the participants identified the following themes as important strategies to be used in managing projects to reduce post-war project failure in Liberia: strengthen technical capacities of project teams, ensure effective and efficient project implementation,

monitoring, and evaluation; and effective communication skills. I present recommendations for actions that are consistent with findings from my review of the literature and comments made by the participants to support the themes as follows:

Strengthen Technical Capacities of Project Teams, and Sector-Specific Technical Knowledge

Recommendations:

- Work with PM and KM specialists to formulate targeted capacity development modules; and set up appropriate mechanisms for experienced project managers to mentor other project managers and project teams, especially those new to the post-war context, for transitional support.

New Direction for Future Research:

- Future research could focus on investigating technical capacities for different locations within the post-war context based on the socio-cultural conditions prevailing at different locations.

Ensure Financial Compliance and Accountability

Recommendations:

- Provide adequate resources, including requisite compensation for project teams, to ensure effective and efficient project implementation to reduce project failure.

New Direction for Future Research:

- Investigate the financial management processes that can facilitate provision of requisite resources for project implementation.

Ensure Effective and Efficient Project Implementation, Monitoring, and Evaluation

Recommendations:

- Promote local ownership of project planning, implementation, monitoring, and evaluation strategies by populations living within the post-war context to assure sustainability of project achievements.

New Direction for Future Research:

- Future research could investigate how monitoring and evaluation approaches could facilitate practical application of PM strategies and KM principles within the post-war context.

Ensure Effective Donor-Partner Coordination.

Recommendations:

- Align donor strategies and objectives with the realities that exist within the post-war context to validate feasibility of project implementation approaches, and ensure accountability and financial compliance.

New Direction for Future Research:

- Future research could investigate the challenges faced in coordinating donor-partner arrangements within the post-war context, and how those challenges could be addressed.

Effective Communication Skills, Communicate Project Goals, Objectives, and Resources Needed to Accomplish Objectives; and Knowledge-Sharing Skills

Recommendations:

- Develop monitoring and evaluation systems to share knowledge from previous projects with successive projects to improve project implementation strategies.
- Develop protocols for PM and KM that are specific to the post-war context.

New Direction for Future Research:

- Future research could investigate the most feasible and less costly approaches to information dissemination within the post-war context.

Network and Collaborate with Project Stakeholders to Review Project Progress

Recommendations:

- Develop policies and training packages to facilitate use of applicable PM strategies and KM principles for project managers and project teams working within the post-war context.
- Invest in engaging KM professionals to facilitate application of requisite knowledge to improve PM effectiveness and reduce project failure.

New Direction for Future Research:

- Future research could investigate effective approaches for networking and collaboration between project implementers and stakeholders that can contribute to reduce post-war project failure.

Implications

Project failure has been a daunting occurrence in post-war Liberia, and in complex environments (See Chauvet et al., 2010; MFDP Liberia, 2015; MPEA Liberia, 2012; National policy on non-governmental organizations in Liberia, 2008). Integration of KM principles with post-war PM strategies could enhance PM effectiveness and reduce project failure rates in Liberia. It is the conceivable reduction in post-war project failure rates that emphasizes the social significance of how effective PM influences productivity within the post-war context.

Improved quality of people's daily lives is a manifestation of positive social change. The results of my study may be used to achieve positive social change in Liberia by ensuring the larger population's greater participation in socioeconomic and civic activities addressed by projects toward reducing post-war project failure rates. Further information provided by this study include challenges faced by project managers while managing projects within Liberia's post-war context. Post-war organizational leaders experiencing PM competency challenges will find information obtained from this study as applicable because the emphases suggest that training of project managers will not necessarily lead to reduction in project failure. The results presented in my study could assist organizations to decrease resistance or skepticism about the using certain management strategies and KM principles to implement projects within Liberia's post-war context.

As indicated earlier, the literature reviewed focused on projects implemented within contexts other than post-war. Although project teams have been employing

multiple strategies to reduce project failure, I anticipate that the results of my study will be popular as project managers and organizational leaders become aware of the usefulness within the post-war context. The results of this study are significant in providing a broader outlook to management strategies and KM principles that may be used to reduce post-war project failure. Nafei (2014) and Gholami et al. (2013) maintained that improving organizational performance is dependent on application of productive management strategies to reduce project failure. Use KM principles to improve organizational productivity requires business management decision-making that very few organizational leaders have considered (See Sokhanvar et al., 2014). It is important that organizational leaders within the post-war context obtain sufficient information to facilitate business decisions related to PM while sustaining organizational productivity in the competitive business environment.

Significance to Social Change

As mentioned in chapter 1, results of this study may help project managers to better engage the Liberian populace in project implementation strategies thereby increasing local participation in socioeconomic and civic activities that are often limited to the elite and literate within the communities. By participating in project implementation processes, the local populations will ensure alignment of project activities with existing structures within the social system and accede to ownership of project the results attained. Application of KM principles in project implementation processes will strengthen information flow and knowledge-generating systems to link elite and literate communities with the local populations. The themes identified in my

study may provide awareness to organizational leaders and project managers about management strategies and KM principles to include in Liberia's post-war project planning, implementation, monitoring, and evaluation approaches. The larger population's greater participation in socioeconomic and civic activities may help to reduce post-war project failure rates in Liberia.

Significance to Theory

Project management effectiveness is a precondition for organizational productivity in terms of applicable management strategies and KM principles that can be used to reduce post-war project failure rates (See Little, 2011; PMI, 2013a). The selected expert project managers had an opportunity to express their opinions about management strategies and KM principles that project managers can use to reduce post-war project failure rates in Liberia. The study results may help donor agencies working with Liberia's post-war project implementers to develop strategies toward reducing project failure rates. Post-war project managers may be able to use information from this study to improve project performance by addressing issues related to accountability, high-performance expectations, and consistency in PM effectiveness.

Significance to Practice

The study results may contribute to PM practice by providing managers of development projects with information about how to improve post-war project planning, implementation, monitoring, and evaluation. The projects under focus were those implemented in Liberia and funded by donor agencies such as the World Bank, International Monetary Fund, United Nations agencies, United States Agency for

International Development, European Union, Plan International, and the Swedish International Development Agency (See National policy on non-governmental organizations in Liberia, 2008). The long-term benefits would include reduced post-war project failure rates within the Liberian context.

Based on the influences of management strategies and KM principles identified to reduce project failure rates, project managers and their organizations operating within Liberia's post-war context may initiate processes to integrate the identified management strategies and KM principles into project implementation strategies. In addition, identifying which PM effectiveness dynamics were more applicable to the KM principles may be important to the project managers and their organizations. The study results would equip organizational leaders with information to support their project managers to reduce project failure rates.

Conclusions

In this study, I investigated project managers' perceptions of management strategies and KM principles that can be used to reduce post-war project failure in Liberia. I also explored challenges project managers face while implementing projects within the post-war context. As discussed in Chapter 1, Bhatti et al. (2011), Gholami et al. (2013), and OuYang (2015) emphasized the significance of integrating PM strategies and KM principles to reduce project failure. A comprehensive understanding of how PM strategies are applicable within the post-war context will facilitate reduction of post-war project failure rates. Information revealed in my study contributes to increased acceptance for the use of KM principles in post-war PM. This study explored project

managers' perspectives to fulfill its mission of contributing to address the gap in literature about using management strategies and KM principles to reduce post-war project failure rates. The study findings provide information about support that organizations can provide for their project managers to improve organizational performance. Other researchers may replicate the study on a broader scope to generate information about the use of management strategies and KM principles to reduce project failure within the post-war context.

In summary, it is anticipated that using applicable management strategies and KM principles within the post-war context can reduce project failure rates because post-war complexities affect how projects are managed to achieve positive results. Sustaining organizational productivity through effective PM in the face of diverse challenges is essential for the survival of organizations. Although emphasis could be laid on providing traditional project implementation support to project teams, organizational leaders need to be conversant with strategies that can be used to reduce post-war project failure. Organizational leaders working within the post-war context may apply information obtained from my study to comprehend project managers' challenges, and to formulate approaches to reduce project failure and ensure sustained organizational productivity.

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Appendix A: Expert Project Manager Panel Letter of Invitation

Dear Expert Panelist,

I am a doctorate student at the Walden University conducting research toward completion of a doctoral dissertation in completion for a Doctor of Philosophy in management. You have been invited to participate in a case study as an Expert Project Manager Panel member in recognition of your experience in post-war project management. The goal of the study is to gather opinions about management strategies project managers can use to improve post-war project management effectiveness to reduce project failure rates. Information from the study will assist project managers and organizational leaders operating within the post-war context to better understand and determine what management strategies could be integrated into project planning and implementation processes.

During first-round of the survey each expert panel member will be asked to respond to open-ended questions about how management strategies can be used to reduce post-war project failure. Experts will indicate what knowledge management principles project managers can use to enhance project management effectiveness. To avoid redundancy, duplicates among responses will be removed. For a second-round of the survey, experts will rate their responses given during the first-round about management strategies on a five point Likert scale. Each expert panel member will be given the summary of responses obtained from all the other panel members. Panel members will be asked to review the summary and possibly modify their ratings toward building consensus. During subsequent round(s) of the study, panel members will be presented with a consensus list summarizing all their ratings. Panel members will be asked to confirm their consensus ratings or provide reasons why they retain their ratings as a departure from consensus ratings provided by the other expert panel members. The survey will end when there is agreement with the consensus ratings, and conclusions will be drawn using responses provided.

If you are interested and accept the invitation to participate in this survey as an expert panel member, please respond complete the attached consent form and email to thomas.wobill@waldenu.edu by Friday, May 27, 2017.
Thank you for your time and attention.

Thomas A. N. Wobill

Appendix B: Focus Group Skype Interview Participant Letter of Invitation

Dear Research Participant,

I am a doctorate student at the Walden University conducting research toward completion of a doctoral dissertation in completion for a Doctor of Philosophy in management. You have been invited to participate in a case study as a Focus Group Skype Interview Participant in recognition of your experience in post-war project management. The goal of the study is to gather opinions about management strategies that project managers can use to improve post-war project management effectiveness to reduce project failure rates. Information from the study will assist project managers and organizational leaders operating within the post-war context to better understand and determine what management strategies could be integrated into project planning and implementation processes.

As part of the first-round, an expert panel of project managers will be requested to respond to open-ended questions about what management strategies and knowledge management principles can be used to reduce post-war project failure. During the focus group Skype interview, participants will be requested to review the summarized responses provided by the expert panel members, and express opinions to build consensus on themes to be included in the study. During subsequent round(s) of the study, focus group Skype interview participants will be presented with a consensus list summarizing all their recommended themes. Focus group participants will be asked to confirm their recommended themes or provide reasons why they retain their themes as a departure from the recommended themes. The survey will end when there is consensus, and conclusions will be drawn using responses provided.

If you are interested and accept the invitation to participate in this survey as a focus group Skype interview participant, please respond complete the attached consent form and email to thomas.wobill@waldenu.edu by Friday, May 27, 2017.
Thank you for your time and attention.

Thomas A. N. Wobill

Appendix C: Expert Project Manager Panel Consent Form

I,_____, agree to participate in the online research survey conducted by Thomas A. N. Wobill via email to provide information about management strategies that project managers can use to reduce post-war project failure rates. I understand that participating in this survey is voluntary with no special incentives; there is no penalty for declining to participate, and I can withdraw my consent at any time. I understand that the purpose of this qualitative case study is to explore management strategies and knowledge management principles that project managers working with Liberia's Ministry of Education can use to reduce project failure rates. I agree to the following conditions as regards my voluntary participation:

1. My participation will involve completing an open-questionnaire for Round 1 of a Delphi study and ranking summaries provided by the researcher from subsequent Rounds. The survey will take about one hour of my time for each round.
2. My responses will be treated confidentially.
3. My responses will be stored in an external hard drive and will remain until analyzed by Thomas A. N. Wobill. No one else will have access to my responses. The responses will be secured by Thomas A. N. Wobill at all times.
4. Information obtained from this study will be used exclusively for research.
5. The research procedures are not experimental and do not involve any risks greater than ordinarily encountered by participants in their daily activities.
6. Participants will be identified using code numbers, and their names will be used solely to verify participation and for follow-up.
5. The principal investigator in the research is Thomas A. N. Wobill. Questions regarding this research should be directed to Thomas A. N. Wobill, IITA Headquarters, PMB 5320, Oyo Road Ibadan, Oyo State, Nigeria, email: thomas.wobill@waldenu.edu, telephone: +2348105176822.

I have perused and understand this consent form, and I sign it freely and voluntarily. I have been given a copy of this consent form for my personal record.

Date: _____

Signed: _____
(Participant's written or electronic signature in email form)

I confirm that this consent form has been explained to the research participant before requesting him/her to sign it.
Signed: __Principal Investigator, _Thomas A. N. Wobill

Appendix D: Focus Group Skype Interview Participants Consent Form

I,_____, agree to participate in the online research survey conducted by Thomas A. N. Wobill via Skype and email to provide information about management strategies that project managers can use to reduce post-war project failure rates. I understand that participating in this survey is voluntary with no special incentives; there is no penalty for declining to participate, and I can withdraw my consent at any time. I understand that the purpose of this qualitative case study is to explore management strategies and knowledge management principles that project managers working with Liberia's Ministry of Education can use to reduce project failure rates. I agree to the following conditions as regards my voluntary participation:

1. My participation will involve Skype interviews for each Round of a Delphi study and validating responses provided by an expert panel of project managers. The survey will take about one hour of my time for each round.
2. My responses will be treated confidentially.
3. Responses provided during the group Skype interviews will be stored in an external hard drive and will remain until analyzed by Thomas A. N. Wobill. No one else will have access to the group Skype interview responses. The responses will be secured by Thomas A. N. Wobill at all times.
4. Information obtained from this study will be used exclusively for research.
5. The research procedures are not experimental and do not involve any risks greater than ordinarily encountered by participants in their daily activities.
6. Participants will be identified using code numbers, and their names will be used solely to verify participation and for follow-up.
7. The principal investigator in the research is Thomas A. N. Wobill. Questions regarding this research should be directed to Thomas A. N. Wobill, IITA Headquarters, PMB 5320, Oyo Road Ibadan, Oyo State, Nigeria, email: thomas.wobill@waldenu.edu, telephone: +2348105176822.

I have perused and understand this consent form, and I sign it freely and voluntarily. I have been given a copy of this consent form for my personal record.

Date: _____

Signed: _____
(Participant's written or electronic signature in email form)

I confirm that this consent form has been explained to the research participant before requesting him/her to sign it.
Signed: __Principal Investigator, _Thomas A. N. Wobill

Appendix E: Expert Panel Interview Protocol for Round 1

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Research Participant:
Position of Research Participant:
Location of Research Participant in Liberia:

Membership list of organizations registered with Liberia's Ministry of Education (MOE), and are implementing projects in Liberia, will be obtained from the MOE secretariat to identify project managers and purposefully select expert panel members for this qualitative study. Twenty-five project managers who meet the following criteria and are willing to participate in the research will be selected as expert panel members:

- Must have worked in post-war Liberia and/or other post-war contexts for at least 2 years;
- Must have worked as a program manager for at least 2 years;
- Must be working with a project that is registered with the MOE;
- Could be of any ethnicity, any age, and male or female.

The Purpose of this qualitative case study using Delphi technique is to explore management strategies and knowledge management principles that project managers can use to reduce post-war project failure rates. Code numbers will be used to represent participants throughout the research to maintain anonymity, and their names will be used solely to verify participation and for follow-up. Data obtained will be stored on a password protected external hard drive. The online electronic questionnaire will take about 30 minutes to complete.

[Send invitation letters and consent forms to potential participants via email. After a participant has read, signed and returned the consent form via email, send the questionnaire to the research participant for responses]

Appendix F: Delphi Questionnaire for Round 1

Thank you for accepting to participate in this research about what management strategies project managers can use to improve project management effectiveness. The design of questionnaire is to have open-ended questions presented about using management strategies to improve project management effectiveness.

You are kindly requested to provide your expert opinion about the information requested. The questionnaire will take about 30 minutes to complete. Please return your completed questionnaire to me by Friday, June 24, 2017. Your responses will remain confidential and will not be revealed to other survey participants. I will send you the summary of results from this questionnaire for a second-round of the survey. Thank you for your time and assistance.

Question 1: What competency challenges do education sector project managers working with Liberia's MOE face in reducing project failure?
Question 2: How can education sector project managers working with Liberia's MOE overcome the competency challenges and reduce project failure?
Question 3: What resources would you recommend organizations to employ in education-sector projects in Liberia to enable project managers reduce project failure?
Question 4: How may the resources provided to education sector project managers be used to reduce project failure?
Question 5: What support would you recommend the MOE to provide to enable organizations implementing education sector projects in Liberia to reduce project failure?
Question 6: What knowledge management competences would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?
Question 7: How may education sector project managers working with Liberia's MOE use the knowledge management competences to reduce project failure?
Question 8: What resources for knowledge management would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?
Question 9: How may education sector project managers working with Liberia's MOE use the knowledge management resources to reduce project failure?

[Acknowledge receipt of responses and thank the research participant for participation.]

Appendix G: Focus Group Interview Protocol for Round 1

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Focus Group Interview Participants:
Positions of Focus Group Interview Participants:
Locations of Focus Group Interview Participants in Liberia:

Membership list of organizations registered with Liberia's Ministry of Education (MOE), and are implementing projects in Liberia, will be obtained from the MOE secretariat to identify project managers and purposefully select focus group interview participants for this qualitative study. Three project managers who meet the following criteria and are willing to participate in the research will be selected as expert panel members:

- Must have worked in post-war Liberia and/or other post-war contexts for at least 2 years;
- Must have worked as a program manager for at least 2 years;
- Must be working with a project that is registered with the MOE;
- Must have the highest number of years of working experience among the 20 project managers working with the MOE;
- Must have the highest academic credentials among the 20 project managers working with the MOE;
- Could be of any ethnicity, any age, and male or female.

The Purpose of this qualitative case study using Delphi technique is to explore management strategies and knowledge management principles that project managers can use to reduce post-war project failure rates. Code numbers will be used to represent participants throughout the research to maintain anonymity, and their names will be used solely to verify participation and for follow-up. Data obtained will be stored on a password protected external hard drive. The online focus group interview will take about one hour to complete.

[Send invitation letters and consent forms to potential participants via email. After a research participant has read, signed and returned the consent form via email, send the questionnaire and aggregated responses by the expert panel members to the focus group interview participants to prepare for the Skype interview]

Appendix H: Delphi Questionnaire for Round 1 Focus Group Interview

Thank you for accepting to participate in this research about what management strategies project managers can use to reduce post-war project failure rates. The design of questionnaire is to have open-ended questions presented about using management strategies to reduce post-war project failure rates.

You are kindly requested to participate in a Skype focus group interview on Friday, June 23, review responses provided by an expert panel of program managers, and provide your opinion about the information requested. The interview will take about one hour to complete. Your responses will remain confidential. I will send you the summary of results from this questionnaire for a second-round of the survey. Thank you for your time and assistance.

Appendix I: Expert Panel Interview Protocol for Round 2

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Research Participant:
Position of Research Participant:
Location of Research Participant in Liberia:

Project managers who participated in Round 1 of the Delphi survey and are willing to participate in Round 2 will participate as expert panel members.

[Send the aggregated and summarized responses to each research participant via email together with his/her responses from Round 1 for responses].

Thank you for participating in the first-round of this research about management strategies and knowledge management principles that project managers can use to reduce post-war project failure rates. The questionnaire for Round 2 is designed to request expert project managers to provide ratings on the summarized themes on *desirability* and *feasibility* of the themes to be used as strategies to reduce post-war project failure rates.

You are kindly requested to provide ratings on a 5-point Likert scale for each theme developed using collective responses obtained from expert project managers, and validated with the focus group participants in a Skype discussion. The questionnaire, attached to this mail, will take about 30 minutes to complete. Please return your completed questionnaire to me within 1 week from today. Your responses will remain confidential and will not be revealed to other survey participants. I will send you the summary report about the participants' agreement and consensus, or otherwise. Thank you for your time and assistance.

Appendix J: Delphi Questionnaire for Round 2

Please provide separate ratings using the 5-point likert scale below to indicate the extent to which you agree or disagree whether each theme listed under each question is desirable (in the second column), and whether it is feasible (in the third column) to be included in strategies to reduce post-war project failure. ***Please write numbers only for your separate ratings in the second and third columns respectively where:*** **1 = *strongly disagree,* 2 = *disagree,* 3 = *uncertain,* 4 = *agree, and* 5 = *strongly agree***		
Question 1: What competency challenges do education sector project managers working with Liberia's MOE face in reducing project failure? (What competency challenges should be addressed?)	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Limited organizational skills		
2. Limited technical capability		
3. Weak leadership quality		
4. Poor project implementation strategies		
5. Unsatisfactory financial management practices		
Question 2: How can education sector project managers working with Liberia's MOE overcome the competency challenges and reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Strengthen technical capacities of project teams		
2. Strengthen organizational structures		
3. Improve project planning, implementation, monitoring, and evaluation		
4. Ensure adequate allocation of funds for project activities		
Question 3: What resources would you recommend organizations to employ in education-sector projects in Liberia to enable project managers reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Qualified and competent staff		
2. Adequate logistics		
3. Adequate project funding		
4. Shared knowledge from previous projects		
Question 4: How can the resources provided to education sector project managers be used to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Ensure financial compliance and accountability		
2. Ensure effective and efficient project implementation, monitoring, and evaluation		
3. Use resources to develop capacity of project staff		
4. Ensure effective donor-partner coordination		
Question 5: What support would you recommend the MOE to provide to enable organizations implementing education sector projects in Liberia to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)

1. Enforce standards and compliance		
2. Strengthen overall project monitoring system		
3. Develop technical capacities of staff		
4. Share knowledge and key documentation with projects		
Question 6: What knowledge management competences would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Effective communication skills		
2. Knowledge creation skills		
3. Knowledge-sharing skills		
4. Knowledge acquisition skills		
5. Knowledge utilization skills		
6. Sector-specific technical knowledge		
Question 7: How can education sector project managers working with Liberia's MOE use the knowledge management competences to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Communicate project goals, objectives, and resources needed to accomplish objectives		
2. Network and collaborate with project stakeholders to review project progress		
3. Ensure that project tasks are completed by project teams		
4. Develop internal technical capacity		
5. Appropriately delegate responsibilities to local staff		
Question 8: What resources for knowledge management would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Data management system		
2. Periodic project review system		
3. Adequate Logistics		
4. Capacity development system		
5. Documented lessons from projects		
6. Qualified and competent staff		
7. Strong network of stakeholders		
Question 9: How can education sector project managers working with Liberia's MOE use the knowledge management resources to reduce project failure?	**Desirable** (1,2,3,4, or 5)	**Feasible** (1,2,3,4, or 5)
1. Organize project team members to implement project effectively		
2. Regularly conduct project performance reviews		
3. Establish user-friendly knowledge management system that is accessible to all employees		

Appendix K: Focus Group Interview Protocol for Round 2

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Focus Group Interview Participants:
Positions of Focus Group Interview Participants:
Locations of Focus Group Interview Participants in Liberia:

Project managers who participated in Round 1 of the Delphi Skype interview and are willing to participate in Round 2 will participate as focus group interview participants.

[Send the focus group interview summary and the confirmed responses by the expert panel members to each Skype interview participant via email to prepare for Round 2 Skype interview].

Thank you for participating in the first-round of this research about using management strategies and knowledge management principles to reduce post-war project failure rates. Round 2 discussion guide is designed to review the summary of ratings provided by expert project managers on desirability and feasibility of the themes as strategies for reducing project failure rates.

You are kindly requested to participate in a second-round Skype focus group discussion to review the summary of ratings, and provide your opinion about the information presented. The Skype discussion will take about one hour to complete. Your responses will be used to build consensus and draw conclusions about desirability and feasibility of the themes to be used as strategies for reducing project failure rates. Your responses will remain confidential. Thank you for your time and assistance.

[Thank the research participants for participation.]

Appendix L: Expert Panel Interview Protocol for Round 3

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Research Participant:
Position of Research Participant:
Location of Research Participant in Liberia:

Project managers who participated in Round 2 of the Delphi survey and are willing to participate in Round 3 will participate as expert panel members.

[Send the aggregated and summarized responses to each research participant via email together with his/her responses from Round 2 for responses].

Thank you for participating in the second-round of this research about management strategies and knowledge management principles that project managers can use to reduce post-war project failure rates. The questionnaire for Round 3 is designed to request expert project managers to provide ratings on the summarized themes on *importance* and *confidence* for the themes to be used as strategies to reduce post-war project failure rates.

You are kindly requested to provide ratings on a 5-point Likert scale for each theme developed using collective responses obtained from expert project managers, and validated with the focus group participants in a Skype discussion. The questionnaire, attached to this mail, will take about 30 minutes to complete. Please return your completed questionnaire to me within 1 week from today. Your responses will remain confidential and will not be revealed to other survey participants. I will send you the summary report about the participants' agreement and consensus, or otherwise. Thank you for your time and assistance.

Appendix M: Delphi Questionnaire for Round 3

Please provide separate ratings using the 5-point Likert scale below to indicate the extent to which you agree or disagree whether each theme listed under each question is of importance (in the second column), and whether you have confidence (in the third column) for it to be included in strategies to reduce post-war project failure. ***Please write numbers only for your separate ratings in the second and third columns respectively where:*** **1 = *strongly disagree,* 2 = *disagree,* 3 = *uncertain,* 4 = *agree, and* 5 = *strongly agree***		
Question 1: What competency challenges do education sector project managers working with Liberia's MOE face in reducing project failure? *(What competency challenges should be addressed?)*	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
6. Limited organizational skills		
7. Limited technical capability		
8. Weak leadership quality		
9. Poor project implementation strategies		
10. Unsatisfactory financial management practices		
Question 2: How can education sector project managers working with Liberia's MOE overcome the competency challenges and reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
2. Strengthen technical capacities of project teams		
5. Strengthen organizational structures		
6. Improve project planning, implementation, monitoring, and evaluation		
7. Ensure adequate allocation of funds for project activities		
Question 3: What resources would you recommend organizations to employ in education-sector projects in Liberia to enable project managers reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
5. Qualified and competent staff		
6. Adequate logistics		
7. Adequate project funding		
8. Shared knowledge from previous projects		
Question 4: How may the resources provided to education sector project managers be used to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
5. Ensure financial compliance and accountability		
6. Ensure effective and efficient project implementation, monitoring, and evaluation		
7. Use resources to develop capacity of project staff		

8. Ensure effective donor-partner coordination		
Question 5: What support would you recommend the MOE to provide to enable organizations implementing education sector projects in Liberia to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
7. Enforce standards and compliance		
8. Strengthen overall project monitoring system		
9. Develop technical capacities of staff		
10. Share knowledge and key documentation with projects		
Question 6: What knowledge management competences would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
5. Effective communication skills		
6. Knowledge creation skills		
7. Knowledge-sharing skills		
8. Knowledge acquisition skills		
11. Knowledge utilization skills		
12. Sector-specific technical knowledge		
Question 7: How may education sector project managers working with Liberia's MOE use the knowledge management competences to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
6. Communicate project goals, objectives, and resources needed to accomplish objectives		
7. Network and collaborate with project stakeholders to review project progress		
8. Ensure that project tasks are completed by project teams		
9. Develop internal technical capacity		
10. Appropriately delegate responsibilities to local staff		
Question 8: What resources for knowledge management would you recommend for education sector project managers working with Liberia's MOE to use to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
8. Data management system		
9. Periodic project review system		
10. Adequate Logistics		
11. Capacity development system		
12. Documented lessons from projects		

13. Qualified and competent staff		
14. Strong network of stakeholders		
Question 9: How may education sector project managers working with Liberia's MOE use the knowledge management resources to reduce project failure?	**Importance** (1,2,3,4, or 5)	**Confidence** (1,2,3,4, or 5)
4. Organize project team members to implement project effectively		
5. Regularly conduct project performance reviews		
6. Establish user-friendly knowledge management system that is accessible to all employees		

Appendix N: Focus Group Interview Protocol for Round 3

Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates

Date of Interview:
Name of Interviewer: Thomas A. N. Wobill
Focus Group Interview Participants:
Positions of Focus Group Interview Participants:
Locations of Focus Group Interview Participants in Liberia:

Project managers who participated in Round 2 of the Delphi Skype interview and are willing to participate in Round 3 will participate as focus group interview participants.

[Send the focus group interview summary and the confirmed responses by the panel members to each Skype interview participant via email to prepare for Round 3 Skype interview].

Thank you for participating in the second-round of this research about using management strategies and knowledge management principles to reduce post-war project failure rates. Round 3 discussion guide is designed to review the summary of ratings provided by expert project managers on importance and confidence of the themes as strategies for reducing project failure rates.

You are kindly requested to participate in a third-round Skype focus group discussion to review the summary of ratings, and provide your opinion about the information presented. The Skype discussion will take about one hour to complete. Your responses will be used to build consensus and draw conclusions about importance and confidence for the themes to be used as strategies to reduce project failure rates. Your responses will remain confidential. Thank you for your time and assistance.

[Acknowledge receipt of responses and thank the research participant for participation.]

Appendix O: Project Manager Demographic Questionnaire

This form is a demographic questionnaire that will assist the researcher to identify Project Managers according to inclusion criteria associated with the study.

Project Manager Inclusion Criteria

School Name	Walden University
Dissertation Study Name	Case Study of Using Management Strategies to Reduce Post-War Project Failure Rates
Researcher	Thomas A. N. Wobill
Study Completion Date	

	Criteria	Answer Category	Comments
1.	What is your gender?	☐ Male ☐ Female	
2.	What is your highest educational credentials?	_____	
3.	Which education subsector does your project belong to?	_____	
4.	How long have you worked as a project manager within the post-war context?	☐ 1-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ 20 years and over	
5.	Does your project/organization engage the services of a knowledge management professional?	☐ Yes ☐ No	
6.	Is your organization registered with the MOE?	☐ Yes ☐ No	

Please do not enter personal identifiable information into questionnaires associated with this study. Please email this completed form to the researcher for review at: thomas.wobill@waldenu.edu

Thank you for your interest in my study.

Appendix P: Summary of Themes Developed from Participants' Responses

Name	Description	Node Type	Number of Sources Coded	Number of Coding References
Q1_Finding 1	Limited organizational skills	Node	1	6
Q1_Finding 2	Limited technical capability	Node	1	14
Q1_Finding 3	Weak Leadership Quality	Node	1	9
Q1_Finding 4	Poor project implementation strategies	Node	1	10
Q1_Finding 5	Unsatisfactory financial management practices	Node	1	6
Q2_Finding 6	Strengthen technical capacities of project teams	Node	1	11
Q2_Finding 7	Strengthen organizational structures	Node	1	9
Q2_Finding 8	Improve project planning, implementation, monitoring, and evaluation	Node	1	10
Q2_Finding 9	Ensure adequate allocation of funds for project activities	Node	1	4
Q3_Finding 10	Qualified and competent staff	Node	1	13
Q3_Finding 11	Adequate logistics	Node	1	9
Q3_Finding 12	Adequate project funding and time allocation	Node	1	12
Q3_Finding 13	Shared knowledge from previous projects	Node	1	4
Q4_Finding 14	Ensure financial compliance and accountability	Node	1	8
Q4_Finding 15	Ensure effective and efficient project implementation, monitoring, and evaluation	Node	1	12
Q4_Finding 16	Use resources to develop capacity of project staff	Node	1	6
Q4_Finding 17	Ensure effective donor-partner coordination	Node	1	1
Q5_Finding 18	Enforce standards and compliance	Node	1	12
Q5_Finding 19	Strengthen overall project monitoring system	Node	1	9
Q5_Finding 20	Develop technical capacities of local staff	Node	1	5
Q5_Finding 21	Share knowledge and key documentation with projects	Node	1	5

Q6_Finding 22	Effective communication skills	Node	1	8
Q6_Finding 23	Knowledge creation skills	Node	1	5
Q6_Finding 24	Knowledge-sharing skills	Node	1	7
Q6_Finding 25	Knowledge acquisition skills	Node	1	2
Q6_Finding 26	Knowledge utilization skills	Node	1	8
Q6_Finding 27	Sector-specific technical knowledge	Node	1	4
Q7_Finding 28	Communicate project goals, objectives, and resources needed to accomplish the objectives	Node	1	6
Q7_Finding 29	Network and collaborate with project stakeholders to review project progress	Node	1	7
Q7_Finding 30	Ensure that project tasks are completed by project teams	Node	1	5
Q7_Finding 31	Develop internal technical capacity	Node	1	3
Q7_Finding 32	Appropriately delegate responsibilities to local staff	Node	1	2
Q8_Finding 33	Data management system	Node	1	7
Q8_Finding 34	Periodic project review system	Node	1	3
Q8_Finding 35	Adequate logistics	Node	1	5
Q8_Finding 36	Capacity development system	Node	1	7
Q8_Finding 37	Documented lessons from projects	Node	1	3
Q8_Finding 38	Qualified and competent staff	Node	1	3
Q8_Finding 39	Strong network of stakeholders	Node	1	1
Q9_Finding 40	Organize project team members to implement project effectively	Node	1	7
Q9_Finding 41	Regularly conduct project performance reviews	Node	1	5
Q9_Finding 42	Establish user-friendly KM system that is accessible to all employees	Node	1	3

Appendix Q: Consensus Themes for Desirability and Feasibility

The themes for which consensus criteria were met for "***desirable***" and "***feasible***" are listed below. They were selected to reach consensus by the criteria of: a mode of at least 4; a median of at least 4, and at least three quarters (12 out of 15 for Round 2) of participants rating the theme as "agree" or "strongly agree" to be included in strategies to reduce post-war project failure.

1. Finding 6: Strengthen technical capacities of project teams
2. Finding 10: Qualified and competent staff
3. Finding 11: Adequate logistics
4. Finding 12: Adequate project funding and time allocation
5. Finding 13: Shared knowledge from previous projects
6. Finding 14: Ensure financial compliance and accountability
7. Finding 15: Ensure effective and efficient project implementation, monitoring, and evaluation
8. Finding 17: Ensure effective donor-partner coordination
9. Finding 22: Effective communication skills
10. Finding 24: Knowledge-sharing skills
11. Finding 27: Sector-specific technical knowledge
12. Finding 28: Communicate project goals, objectives, and resources needed to accomplish the objectives
13. Finding 29: Network and collaborate with project stakeholders to review project progress
14. Finding 33: Data management system
15. Finding 34: Periodic project review system
16. Finding 36: Capacity development system
17. Finding 37: Documented lessons from projects
18. Finding 41: Regularly conduct project performance reviews

Appendix R: Consensus Themes for Importance and Confidence

The themes for which consensus criteria were met for "***importance***" and "***confidence***" are listed below. They were selected to reach consensus by the criteria of: a mode of at least 4; a median of at least 4, and at least three quarters (11 out of 14 for round 3) of participants rating the theme as "agree" or "strongly agree" to be included in strategies to reduce post-war project failure.

1. Finding 6: Strengthen technical capacities of project teams.
2. Finding 14: Ensure financial compliance and accountability.
3. Finding 15: Ensure effective and efficient project implementation, monitoring, and evaluation.
4. Finding 17: Ensure effective donor-partner coordination.
5. Finding 22: Effective communication skills.
6. Finding 24: Knowledge-sharing skills.
7. Finding 27: Sector-specific technical knowledge.
8. Finding 28: Communicate project goals, objectives, and resources needed to accomplish objectives.
9. Finding 29: Network and collaborate with project stakeholders to review project progress.