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Department of Defense Project Management Team Leaders:

Team Dynamics and Teamwork Strategies During Complex Construction Projects

A Dissertation by

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A Private Nonprofit Affiliate of the University of Massachusetts

Irvine, California

School of Education

Submitted in partial fulfillment of the requirements for the degree of

Doctor of Education in Organizational Leadership

April 2024

Committee in charge:

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Doctor of Education in Organizational Leadership

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April 2024

Department of Defense Project Management Team Leaders:

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ABSTRACT

Department of Defense Project Management Team Leaders:

Team Dynamics and Teamwork Strategies During Complex Construction Projects

by Shane Frey

Purpose: This qualitative multi-case study explored the challenges, strategies, and recommendations that DOD project management team leaders experienced as they made complex decisions leading successful construction projects based on Parker's (2008) model.

Methodology: A qualitative multi-case study research design described the challenges, strategies, and recommendations Department of Defense project management team leaders used as they made complex decisions leading successful construction projects.

Findings: Close examination of data collected from interviews and artifacts yielded 117 frequencies for DOD project management team leader's team characteristics, and six themes regarding the lived experiences, challenges, strategies, and recommendations. Five key findings and one unexpected finding were identified as to how DOD project management team leaders identify and describe as they navigate complex construction projects with their team.

Conclusions: The study supported that key elements within a team need to be identified, communicated, and exercised during the duration of a DOD project management team in

construction. Key elements of the team structure identified were clear purpose, setting clear roles and work assignments, inclusive participation, active listening, and open communication and trust. These actions can be better supported through an outside agency in a learning setting to better prepare DOD project management team leaders.

Recommendations: Further research is recommended to replicate this qualitative multiple case study for DOD project management team leaders in different regions of the country. Furthermore, future research could narrow down the research to exclusively civilian, or military-only members. These future studies would add breadth and depth to the data, and a better overall understanding of how DOD project management teams function and could be more effective moving forward.

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CHAPTER I: INTRODUCTION

Shelter has been one of the primary basic human survival needs since the beginning of time. Shelter construction has vastly improved over centuries, and in today's modern society, shelter construction has expanded to apartments, schools, office spaces, large corporate buildings, and entertainment facilities. As a result, present-day construction projects have created complex issues to be developed, managed, and executed by project team leaders.

Construction projects have had a long history of running over budget due to leadership, estimation process, project features, external factors, design process, biding environment and contractor behavior, and unforeseen changes (Federle & Pigneri, 1993; Flyvberg et al., 2002; Government Accountability Office, 1981; Giegerich, 2002; Harbuck, 2004; Jahren & Ashe, 1990; Thal et al., 2010; Trost & Oberlender, 2003; Zentner, 1996). The Panama Canal Expansion and The Big Dig of Boston are two historic U.S. construction projects that were over budget, and over time. The Panama Canal Expansion was nearly two years behind schedule and approximately $1.16 billion over budget due to poor leadership, design, and external factors such as malaria (Kahn, 2014; Padget, 2016). The Big Dig of Boston was the most expensive highway project in the United States. The project, created to replace the existing six-lane highway with 10 lanes underground, was estimated to be $19.4 billion over budget after paying borrowed interest, and nine years delayed due to cost overruns, delays, leaks, design flaws, charges of poor execution, and the use of substandard material (Murphy, 2008). These projects could have mitigated their budget and schedule with the appropriate leader and teams in place. Large scale projects occur in both the private and public sector as well as within military construction in the Department of Defense.

The Department of Defense has (DoD) been at the forefront of convoluted construction projects for decades. These projects are led by team leaders who must keep problematic projects on time and under budget. DOD construction projects are unique in forms of acquisition because of how the projects are acquired and developed in the fiscal sense. Some research suggests that military and project team leaders could develop teams by exploring the experiences of project managers who construct projects for the military (Gadeken, 2015).

Renowned researchers and experts in the field have identified that teams are frequently required to meet the needs and demands directly related to organizational change and performance (Hackman, 2002; Harvey & Drolet, 2006; Katzenbach & Smith, 1999; Larson & LaFasto, 1989). Highly successful teams can be developed to the needs and demands of the organization; nevertheless, not all teams are built in the same fashion. Teams are formed, developed, managed, and led in various forms; however, numerous team frameworks allow teams to become successful with strategies, methods, and foundational systems of accountability and responsibility (Hackman, 2002). In addition, teams can formulate strategies and ideas to overcome complex issues when the goals and objectives are a shared value (Jones & Bearley, 1994; Larson & LaFasto, 1989; Lencioni, 2002).

Department of Defense project teams are often formed with individuals of various backgrounds, cultural differences, career-focused paths, and vastly different life experiences. The military is primarily known as one of the most diverse workforces in the world (Congressional Research Service, 2023). Diversity can be a team's greatest asset or its biggest difficulty. The dynamic team-building strategies that DoD project management team leaders choose with the diverse work force to lead successful construction projects can determine the level of success that is achieved. Additionally, there is limited research on how Department of Defense

construction project team leaders develop teams, trust, and the critical decision-making process when leading effective teams.

Historical Background

The Department of Defense is America's largest government agency with 3.4 million service members and civilians, an $816.7 billion National Defense Budget, and over 4,800 sites in over 160 countries (Our Story, 2023). An organization this vast will have areas of weaknesses that need to be improved. The military is largely known as one of the most diverse workforces in the world (Congressional Research Service, 2023). DOD teams are often formed with individuals of various backgrounds, cultural differences, career-focused paths, and different life experiences.

The Department of Defense currently has seven distinct branches of service. According to the National Security Act of 1947, the National Military Establishment, later re-titled the Department of Defense (DOD) in 1949, the Department of the Army, Department of Navy, and Department of the Air Force were formed. Each of these military departments was created for a specific purpose and sector of defense. Presently, the U.S. Department of Defense identifies seven specific branches of service: the U.S. Army, Marine Corps, Navy, Air Force, Space Force, Coast Guard, and the National Guard (United States Department of Defense, 2023).

The seven branches of the DOD have unique requirements and missions; therefore, the type, size, and construction requirements vary for each branch. For example, the Air Force may need a training facility for pilots, whereas the Army may need land and structures for tactical movements simulating a deployed environment such as the 102nd Training Division at Fort Leonard Wood, Missouri (United States Army Reserve, n.d.). The various construction acquisition processes affect the Project Manager and the team to support each project. The DOD acquisition methods are Design-Bid-Build, Design Build, Job Order Contracting (JOC), Multiple

Award Contract (MAC), and in-house military construction (Congressional Research Service, 2023). The DOD's military construction (MILCON) program comprises a wide range of responsibilities, such as facility planning, project programming and budgeting, and project design and construction from the Army Corps of Engineers and the Naval Facilities Engineering Command (Congressional Research Service, 2023). Each of these construction agents is located globally and seeks to be high performing teams.

Current Project Management

Project management over time has changed in size, responsibility, and overall scope of authority (Morris & DeLapp, 2020). It is important to distinguish the difference between a project from a program. A project's objective is to develop, modify, or enhance a product, service, or system by the relationship of scope, resources, and time (United States Office of Personnel Management, 2019). Projects are not viewed as routine operations, rather, they are developed for a specific purpose. In addition, the project is a temporary undertaking with an endpoint, and a program is an ongoing operation (Project Manager Institute, 2017). For example, a program manager would be in charge of continuous training operations, and a project manager would be in charge of constructing a training facility.

The specific acquisition method, construction agent, and overall design for each project team will be project specific depending on the project's scope, complexity, and budget (Hendrickson, 1998). For example, painting an interior office building may be a project best suited for the in-house military operations to perform and execute. On the other hand, a complex project with a large budget such as a four-story aircraft hangar with office spaces would be more suited to be professionally engineered by the Army Corps of Engineers and executed by a

privatized contractor with specific experience in construction execution (Congressional Research Service, 2023).

Project Manager Roles and Responsibilities

Project Managers have various roles and responsibilities according to the specific discipline the role is developed for. According to the U.S. Office of Personnel Management (2019), a project manager's functions are characterized by a common set of duties and tasks such as:

- determine appropriate products or services with clients or customers to define project scope, requirements, and deliverables
- develop, modify, or provide input to project plans
- implement project plans to meet objectives
- coordinate and integrate project activities
- manages, leads, or administer project resources
- monitor project activities and resources to mitigate risk; implement or maintain quality assurance processes
- makes improvements, solve problems, or take corrective action when problems arise; give presentations or briefings on all aspects of the project
- participate in phase, milestone, and final project reviews; identify project documentation requirements or procedures
- develop and implement product release plan

The overall level of responsibility for each core task for a Project Manager can be changed or altered depending on the need of the project. In addition, there may be several project managers on a singular project, depending on the size and scope. However, in these cases there

will be a Senior Project Manager in these instances (United States Office of Personnel Management, 2019).

Key Players and Typical Teams

According to the Congressional Research Service (2023), military construction teams have a set of authorities and processes that determines a core set of key players for developing, managing, and executing a construction project. However, certain DOD functions will require additional team members depending on the size, complexity, and organizational standards set forth. For example, the Naval Facilities Engineering Command (NAVFAC) is constructed of both design and execution combined into one. A typical NAVFAC project management construction team is comprised of a Supervisory Contract Specialist, Project Manager, Design Manager, Construction Manager, Engineering Technician, Installation Real Property Officer, and the Client (CM Handbook, 2019). In addition, a supporting cast of engineers in each discipline such as civil, mechanical, and electrical engineering can be assigned to a project on an as-needed basis to help the team traverse through complex engineering decisions. However, the supporting cast will not be involved in any of the daily operations of the project.

The Department of Defense exclusively uses Design-Bid-Build, Design Build, Job Order Contracting, and Multiple Award Contract teams for the physical construction labor to be contracted out to a non-Department of Defense contractor to be performed (Congressional Research Service, 2023).

Design-Bid-Build

The Design-Bid-Build is the most popular delivery method in the U.S. because the government chooses an architect to design the construction project and gathers construction bids from general contractors, requiring a contract from an architect and a general contractor (Project

Sight, 2022). In a Design Build, the chosen contractor is the architect and general contractor responsible for the design, inconsistencies, and end product with partnership and direction from the government project manager (Product Sight, 2022).

Job Order Contract

A Job Order Contract is an indefinite-delivery, indefinite-quantity project delivery method that allows multiple projects to fall under a single long-term contract (Product Sight, 2022). An example of a Job Order Contract method is to have a contractor bid on small renovations that would vary in size and scope on several buildings and combine all these requirements into one Job Order Contract.

Multiple Award Contract

A Multiple Award Contract (MAC) is a contracting avenue used to acquire bids from vetted and approved contractors on various projects (Project Sight, 2022). The Multiple Award Contract is a contracting vehicle in how projects can be awarded. For example, a MAC can typically have five general contractors that have been pre-qualified to bid on upcoming projects. This allows a faster acquisition process to award projects as the vetting and pre-qualification process for new contractors can take weeks. Therefore, the team development, roles, and responsibilities would differ from an in-house military construction project that would include DOD personnel performing the physical labor of construction.

Nonetheless, in all phases of Project Management, the Project Managers are the drivers who are responsible for keeping the project within the budget and timeline (Zeiher, 2015). There are advantages and disadvantages in determining which contracting avenue to use for military construction depending on the variables of the project. However, the one common trait between each of the construction methods is the project manager leading the project.

Issues with Department of Defense (DOD) Teams

Construction Project Managers worldwide face an array of difficult decisions, issues, and problematic situations to overcome. DOD Construction Project Managers have a more strenuous fiscal budget to lead, manage, and execute. For example, the Department of Defense released the Fiscal Year 2023 Defense Budget, and $12.2 billion of the $773 billion budget is dedicated towards construction (United States Department of Defense, 2022). Furthermore, the construction budget of $12.2 billion with 4,800 sites to manage, develop, and advance can be problematic for Project Managers. For instance, Walsh Construction was contracted to build a 176,00 square foot Aircraft Hangar at Travis Air Force Base for $124.5 million (Walsh Group, 2021). The William Beaumont Army Medical Center was slated for $740.4 million for its original contract; unfortunately, the project finished three years late and an additional $629 million over the budget for a total cost of $1.4 billion (Kolenc, 2019).

Project delays can result from many factors. Some of the most pressing delays include design errors, changes in scope, resources becoming unavailable, poorly planned project timelines, project objectives and deliverables not realistic within the project constraint, external vendors not delivering on time, ineffective communication between project stakeholders, and unpredictable external changes such as COVID-19 (Project Delays, 2011). Becoming a high performing DOD Project Manager can be challenging because of the government's fiscal constraints, limited sources, and parameters.

Team Development Models

Rationale for Teams

Renowned researchers and experts in the field have identified that teams are frequently required to meet the needs and demands directly related to organizational change and

performance (Hackman, 2002; Harvey & Drolet, 2006; Katzenbach & Smith, 1999; Larson & LaFasto, 1989). Highly successful teams can be developed to meet the needs and demands of the organization; however, not all teams are built in the same fashion. Teams are formed, developed, managed, and led in various forms; however, numerous team frameworks allow teams to become successful with strategies, methods, and foundational systems of accountability and responsibility (Hackman, 2002). In addition, teams can formulate strategies and ideas to overcome complex issues when the goals and objectives are a shared value (Jones & Bearley, 1994; Larson & LaFasto, 1989; Lencioni, 2002).

Clear Purpose

A critical characteristic of teams, outlined in numerous models, is having a clear purpose (Harvey & Drolet, 2004; Larson & LaFasto, 1989; Parker, 2008). Teams must have a clearly defined purpose to be able to understand the team's objective. Leaders often fail to form effective cohesive teams when they lack a common task or clear purpose (Harvey and Drolet, 2004). An organization could formulate the brightest and hardest working minds together on a team, yet without a clear purpose or objective, they will find great difficulty completing the important task at hand. Katzenbach and Smith (1999) stated that a team should be organized with a clear purpose and common understanding of how performance will be evaluated. The clear purpose stated and outlined by leaders and managers is the team's roadmap to success.

Conflict and Problem-Solving

Problems and conflict are a natural occurrence in teams, yet the team can resolve these issues with an efficiency that determines their success level. Harvey and Drolet (2005) identified five different types of conflict found within teams: value, tangible, interpersonal, boundary, and perceptual conflicts. Value conflicts are defied as struggles over beliefs, tenets, or principles

(Harvey & Drolet, 2005). Tangible conflicts are viewed as those that arise over elements that can be measured, divided, counted, or shared (Harvey & Drolet, 2005). Interpersonal conflicts are characterized as those feelings that individuals have towards one another (Harvey & Drolet, 2005). Boundary conflicts describe two different kinds of boundaries such as boundary penetration and boundary expansion (Harvey & Drolet, 2005). Lastly, perceptual conflicts illustrate an overall mutual misunderstanding (Harvey & Drolet, 2005). Any of the listed types of conflict could result in problems that would lead to a loss of trust within a team.

Team Transparency and Trust

Establishing trust within the team structure has been directly related to the level of team effectiveness and success (Jones and Bearley, 2004; Kahane, 2006; Katzenbach and Smith, 1999; Larson and LaFasto, 1989; Lencioni, 2002; Parker, 2008). In the *Five Dysfunctions of a Team*, the most critical developmental state is for team members to form and develop long-lasting trust among one another (Lencioni, 2002). Lencioni (2002) describes team transparency and trust as the confidence among team members and their peers' intentions are good, and that there is no reason to be protective or careful around the group members. One avenue to build trust within teams is to establish team norms.

Team Norms

Team norms are used as a guide through team conflict and adverse situations and become part of the team's core structure (Larson and LaFasto, 1999). Team norms serve as two functions, first to provide a guide for self-monitoring by team members and to provide a basis for the team leader to give feedback to another member who has violated the norm (Parker, 2008). Furthermore, norms should be reiterated to the team indefinitely in team meeting agendas and

revisited regularly as a working document to align with team objectives and obligations (DeFour & DeFour, 2012).

Organizational Support

Organizational support is vital to a team's success as they look to achieve the outlined goals and achievements set out by the organization. Most researchers contend that organizational support has been documented to positively impact a team's success (Hackman;1990; Jones & Bearley; 2001; Katzenbach & Smith, 1993; Larson & LaFasto; 1989). Support can be resources, encouragement, time, or additional items the team needs to complete the outlined mission from the organization.

Goals and Objectives

Goals and objectives must be clearly stated and a focal point of the team's time and energy. Teams share common strategic goals and objectives as noted by past scholars (Harvey and Drolet, 2004; Katzenbach & Smith, 1999). Teams are often required to note their team goal to ensure clarity, direction, and focus.

Structural Team Dynamics

Teams are formed to achieve a specific goal; therefore, the structure of the team to be built is a thoughtful process. Teams should be composed of smaller numbers to allow for more interaction between members (Hackman, 1990; Harvey & Drolet; 2004; Katzenbach & Smith, 1993; Larson & LaFasto, 1989; Parker;2008). Factors to consider for an effective team are the size of the team, interpersonal skills to navigate problems and issues, critical-thinking, and problem solving. These are all considerations that lead to the chosen theoretical framework for this study.

Parker's Effective Teams Model

One of the most widely known team models was coined and developed by seminal author Glenn Parker. Parker (2008) developed 12 characteristics of an effective team that define and describe the key characteristics or behaviors that distinguish effective teams from ineffective teams. Foundational to these key concepts, Parker based their effective team model on the work of the following organizational development experts: Douglas McGregor's Theory X and Theory Y (1960), Robert Black and Jane Mouton's Managerial Grid Model (1964), Bruce Tuckman's Group Development Model (1965), and influential psychologist Renis Likert (1961), and Chris Argyris (1964). In addition, Parker mentioned over 90 references to dedicated authors and researchers in their book, *Team Players and Team Work* (2008) which first recognized the 12 characteristics of the effective teams model. The development of this model is a direct reflection of key elements of seminal team models reviewed from the literature.

Due to the nature of the study, Parker's 12 Characteristics of Effective Teams Model was downsized to six of the most important by project manager team leaders. This method was determined by referring to a Project Manager expert panel for their recommendations of reducing the number of characteristics in conjunction with project management. Six of 12 characteristics of Parker's effective teams are described below:

1. **clear purpose:** The members of the team must understand and acknowledge the related vision, mission, goal, or task that has been defined and accepted by all team members with an action plan.
2. **participation:** There is an overall atmosphere of inclusion from all members to participate and discuss. Not all team members will participate in the same manner,

however, nonverbal communication of nodding, leaning forward, and taking notes are forms of participation.

3. **listening:** Members of the team are expected to use effective listening techniques such as questioning, paraphrasing, and summarizing to get out ideas.
4. **consensus decision:** For the most important decisions, the team will seek to openly discuss everyone's ideas without formal voting practices or easy compromises.
5. **open communication and trust:** The method of team members freely expressing their opinions on the team's tasks, as well as the group's operations, with a high level of trust, is vital to the team's success. Communication methods can also take precedence outside formal meetings.
6. **clear roles and work assignments:** Every title and position is important, therefore, there must be clear expectations about the roles that are to be played by each team member. Clear assignments are made, accepted, and carried out by everyone included on the team. Work is also to be fairly distributed among team members.

Combining these six characteristics of Parker's Effective Team Model captures the most vital aspects and distinctive characteristics needed for an effective team. Not every team member is required to possess all 12 characteristics to make an effective team. Rather, the team as an entire unit should showcase and demonstrate Parker's Characteristics of Effective Team Model collectively (Parker, 2008).

Statement of the Research Problem

The Department of Defense faces many complex issues; however, the DOD does not fully understand the team dynamics that DOD project management team leaders face when leading complex construction projects. Military teams have long been studied as a unit, yet, little

research has been completed on team dynamics in the DOD construction sector. Project management has become a constant challenge for the U.S. Department of Defense with maintaining cost, schedule, and performance (Cantwell et al., 2013). One of the most critical roles of a DOD project leader is to lead a group of individuals as a team and in conjunction, make good decisions for a successful project (Meier, 2013). At a fundamental level, a team problem-solving approach can enable the leader greater productivity, more effective use of resources, higher-quality decisions, and a more open environment for creativity and innovation (Meier, 2008).

Many articles, books, and publications have been written on team building and team dynamics. The fundamental foundations of an effective team have been researched, however, integrating DOD project management and the dynamics of effective teams is an undiscovered research gap. In addition, construction projects in the DOD differ from commercial construction projects because of a larger, more interdisciplinary design and higher technological risks (Tishler et al., 1996). Therefore, a varied approach to project management and team building must be accounted for, researched, and discovered.

The acquisition process is simply developing, funding, and executing a project (Cantwell et al., 2013). In 1971, Deputy Secretary of Defense David Packard signed the first DOD Direction 5000.1, an eight-page document that created the Defense Acquisition Process (Fox et al., 2015). Since then, DOD leaders have expressed interest in improving the DOD project management process by changing and revising the original directive over 14 times from eight pages, to 840 pages in 1991, and then back down to 90 pages in 2008 (Fox et al., 2015). Researchers have discovered that DOD project managers underestimate the cost and schedule due to an overall understanding of the complexities involved in the design and development of

the project (Lyneis & Ford, 2007). Many of today's complex construction projects will be difficult and challenging for most seasoned project managers. Leading these complex construction projects requires a versatile skill set, the ability to manage a dynamic tea, and a strategic vision (Meier, 2013). While much is known about teams and team leaders in organizations, the Department of Defense project management team leaders' team-building strategies has not been examined as they seek to navigate and lead through complex issues.

Purpose Statement

The purpose of this qualitative multi-case study was to describe what challenges DOD project management team leaders experience as they make complex decisions leading to successful construction projects. In addition, this study explored what DOD project management team leaders described as the most useful as they work with their teams to make complex decisions leading to successful construction projects. In addition, the purpose of the study was to explore what team building strategies DOD project management team leaders used as they made complex decisions leading to successful construction projects based on Parker's Characteristics of Effective Teams Model.

Research Questions

1. What challenges do Department of Defense project management team leaders experience as they make complex decisions leading to successful construction projects?
2. What team-building strategies do Department of Defense project management team leaders use as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model?

3. What do project management team leaders describe as the most useful Parker team characteristic as they work with their teams to make complex decisions leading to successful construction projects?

Significance of the Study

As Department of Defense construction projects continue to grow and evolve with technology and requirements, the need for effective project team leaders will continue to rise. In 2020, DOD contract obligations grew to $421.3 billion, a 41% increase since 2015 (Sanders et al., 2021). In addition, since 2018, the National Defense Strategy has spent $6.9 billion on facilities and construction, doubling the spending in the last five years to support the defense portfolio (Sanders et al., 2021). As construction projects continue to grow, project teams and team leaders must be focused on leading effective teams.

Congress has historically scrutinized the Department of Defense for military construction projects going over time and budget (Angell et al., 2020). Experts in the field have identified many possible factors or causes for project cost overruns in literature reviews (Federle & Pigneri, 1993; Flyvberg et al., 2002; Giegerich, 2002; Government Accountability Office, 1981; Harbuck, 2004; Jahren & Ashe, 1990; Thal et al., 2010; Trost & Oberlender, 2003; Zentner, 1996). These seminal authors have conducted research from 1981 to 2010 and included specific research on military construction and commonly identified variables in construction cost overruns.

Stanton (2011) stated that trust may be viewed as an essential component for effective cooperation and the performance of teams. The development of team dynamics will require the project team leader to be entrenched and grounded in all critical aspects of team development. DOD construction teams can mitigate construction cost overruns by developing proper team

dynamics with knowledge and training in team effectiveness (Landau, 2022). Furthermore, DOD project team leaders can build trust among team members to work as a cohesive unit to use all possible assets on the team for project overruns.

Additionally, there is limited research on how Department of Defense construction project team leaders develop teams, trust, and the critical decision-making process when leading effective teams. Team dysfunction or an ineffective team can be closely associated with Lencioni's model of five Dysfunction of a Team: absence of trust, fear of conflict, lack of commitment, avoidance of accountability, and inattention to results (Lencioni, 2002). In addition, Harvey and Drolet (2005), outlined five main components of effective teams: purpose, composition, interaction, and structure and context. Therefore, findings from this study provide vital information relevant to the critical components of developing and leading effective teams, and where more research will be required.

The construction of key facilities and infrastructure is the backbone of the Department of Defense. The DOD supports approximately 337,846,557 United States citizens; therefore, as the backbone of the DOD, project team leaders must be able to lead highly effective teams (United States Census Bureau, 2023). This study contributes to the literature by exploring the dynamic team-building strategies Department of Defense project management team leaders can use to lead successful construction projects. Assembling the most experienced and skilled team members with a balanced structure will result in a more productive and efficient project (Landau, 2022). The results from this study will be presented to the Department of the Navy, Naval Facilities Engineering Systems Command leadership to incorporate into their business model. The findings will be further introduced to other DOD construction organizations for added benefit and avoidance of cost overruns with effective team structure.

Definitions

Clear Purpose

(Theoretical Definition): The vision, mission, goal, or task of the team has been defined and is now accepted by everyone (Parker, 2008).

(Operational Definition): The members of the team must understand and acknowledge the related vision, mission, goal, or task that has been defined and accepted by all team members with an action plan (Parker, 2008).

Clear Roles and Work Assignments

(Theoretical Definition): There are clear expectations about the roles played by each team member. When action is taken, clear assignments are made, accepted, and carried out. Work is fairly distributed among team members (Parker, 2008).

(Operational Definition): Every title and position is important, therefore, there must be clear expectations about the roles that are to be played by each team member. Clear assignments are made, accepted, and carried out by everyone included on the team. Work is also to be fairly distributed among team members (Parker, 2008).

Conflict

(Operational Definition): Conflict is the result of a disagreement between team members, and can be either destructive towards the team or constructive. These problems arise when opposite opinions are expressed in a hostile tone or voice. Diversity can be the strength of the team if effective communication and listening skills are used properly (Parker, 2008).

Consensus Decision

(Theoretical Definition): For important decisions, the goal is substantial but not necessarily unanimous agreement through open discussion of everyone's ideas and avoidance of formal voting or easy compromises (Parker, 2008).

(Operational Definition): For the most important decisions, the team will seek to openly discuss everyone's ideas without formal voting practices or easy compromises (Parker, 2008).

Effective Team Leaders

(Operational Definition): Effective team leaders ensure the completion of immediate tasks and work assignments in a high-quality and timely fashion. The most effective leaders inspire a desire to produce quality products and services and to provide excellent customer service (Parker, 2008).

Listening

(Theoretical Definition): The members use effective listening techniques such as questioning, paraphrasing, and summarizing to get out ideas (Parker, 2008).

(Operational Definition): The single most important factor distinguishing effective teams from ineffective ones is the ability of team members to listen to one another. Teams are expected to use effective listening techniques such as questioning, paraphrasing, and summarizing to get out ideas (Parker, 2008).

Open Communication and Trust

(Theoretical Definition): Team members feel free to express their opinions on the tasks as well as on the group's operation, coupled with a high level of trust. Communication also takes place outside of meetings (Parker, 2008).

(Operational Definition): The method of team members freely expressing their opinions on the team's tasks, as well as the group's operations, with a high level of trust, is vital to the team's success. Communication methods can also take precedence outside formal meetings (Parker, 2008).

Participation

(Theoretical Definition): There is much discussion and everyone is engaged in action (Parker, 2008).

(Operational Definition): There is an overall atmosphere of inclusion from all members to participate and discuss. Not all team members will participate in the same manner, however; nonverbal communication of nodding, leaning forward, and taking notes are forms of participation (Parker, 2008).

Project Management Teams

(Operation Definition): The project management team, or project team, is the group of people responsible for executing the tasks and producing deliverables outlined in the project plan and schedule, as directed by the project manager, at whatever level of effort or participation defined for them. The project team in construction consists of various roles such as architect, engineer, estimator, construction manager, inspector, and many more as needed for each project (Malsam, 2023)

Team

(Operation Definition): A group of people is not a team. A team is a group of people with a high degree of interdependence geared towards the achievement of a goal or completion of a task (Parker, 2008).

Trust

Theoretical Definition: Trust is the belief amongst team members that their associates' objectives are well-intentioned, and it is not necessary to be guarded around the group (DuFour et al., 2006; Lencioni, 2002). Teams with increased levels of trust can share agreeable and conflicting data without reservation and analyze the results without regard to the source of information (Larson & LaFasto, 1989).

Operational Definition: Outstanding teams trust each other on a vital, emotional level, and they are relaxed showing vulnerability with each other regarding their weaknesses, flaws, uncertainties, and behaviors (Lencioni, 2002).

Delimitations

The study is delimited to Department of Defense project management team leaders who have met four of the six purposeful sampling criteria. The purposeful sampling criteria are summarized as the following:

- department of Defense employees under the project manager umbrella for at least three years
- led a team of four or more individuals on a construction project.
- completed at minimum three construction projects from start to finish as a DOD project manager
- project managers who have obtained a Bachelor's degree or higher in the project management field such as Project Management, Construction Management, Engineering, Architect, etc.
- project managers who have completed and held a Project Manager Professional (PMP) certification

- project managers who have successfully obtained a Professional Engineering license (P.E.)

Organization of the Study

Chapter II of this study covers the literature on excellent teams, team tactics and problems, governance team procedures, and research gaps. Chapter III details the study's methodology, which includes the research design, the population, the sample population, and the data collection and analysis techniques. Chapter IV discusses the data and provides an overview of the study's conclusions. Chapter V summarizes and discusses the findings, as well as their implications for action and future research recommendations. At the conclusion of the chapters, you will find a list of references and pertinent appendices.

CHAPTER II: REVIEW OF THE LITERATURE

This literature review will investigate seminal team models from the past 40 years and identify team dynamics and various challenges within teams. In conjunction, the literature review will explore research on Department of Defense (DOD) project manager's history and the relevance to dynamic teams and complex issues in construction projects.

Furthermore, the literature review will discuss the gap in literature on Department of Defense project managers on how they develop dynamic teams and navigate complex issues. The literature review will cover an array of seminal authors with knowledge about DOD teams, team dynamics, and team-building strategies that project managers use as the lead successful teams through complex construction projects. Lastly, the study will cover Parker's (2008) theoretical framework on the team dynamics model as a lens to examine how DOD project team leaders build dynamic teams and navigate complex issues.

Foundational Research on Seminal Team Models

The dynamics of teams and their key components have been identified and described by seminal researchers, providing a body of research on effective teams. Some of the best well-known researchers in this field have spent extensive time studying teams, such as Hackman (1990), Katzenbach and Smith (1993), Larson and Lafasto (1989), Jones and Bearley (2001), and Tuckman (1965). Katzenbach and Smith (1993) described a perspective on teams consisting of a predetermined number of people with matching talents who are committed to a defined purpose, clear strategic goals, and a specific approach. Jones and Bearley (2001) mentioned that when a group of people's responsibilities are aligned in such a way that members of the group must collaborate, teamwork is required.

In addition, insights into team dynamics have been noted by various researchers around the globe. These authors have noted that teamwork is utilized in numerous industries to help achieve team performance, build employee relations, innovate new ideas, and positively change company culture. For example, Hackman (1990) recognized that members of the team must have a clear purpose, or duties to perform for members to be able to responsibility to accomplish goals and objectives. A lack of external support has resulted in loss of morale, helplessness, and a loss of commitment to the team's goal. Larson and LaFasto (1989) revealed that in situations where teams had external support, they were able to perform better than if they were not provided this vital resource. A team is made up of people who are working toward a shared goal that includes collaborating and synchronizing their activities to meet the outlined team goal (Larson and LaFasto, 1989). These experts recommended that increased team input nurtures more collaborative communication, which decreases defensiveness, smoother implementation, greater learning, and team cohesion.

To illuminate, teams were defined as having a similar objective, working towards a common task, and the belief that the team can accomplish its goal as a collaborative unit (Harvey & Drolet, 2005). In summary, the central issues that differentiate teams include: members having mutual goals, reaching a consensus regarding a shared way to achieve strategic goals, and some type of accountability protocol to share views about approaches (Parker, 2008).

Survey of Research on Seminal Team Dynamics Models

This section of the literature review will describe integral components of team models, best practices, and possible team dysfunctions that will shed light on the research being assumed about school board presidents. Following this section is a synthesis of these team models. The

corresponding sections present a synopsis of key team models that have influenced modern-day philosophy regarding how teams form and develop.

Theoretical Foundation of Team Models

Tuckman's Model. One of the most well-known group development team models developed in the 1960s is still widely used today, the Tuckman Model (Tuckman, 1965). Bruce Tuckman (1965) researched and developed the four stages of group development**:** forming, storming, norming, and performing. This team model has been widely used for group development because of its universal application and ease of implementation amongst teams.

Bruce Truckman (1965) after years of research and studies led this researcher to believe that the outlined four stages of group development would allow members of the group to learn more about one another, thus creating a better bond within the team. Tuckman (1965) outlined each of the four stages of their model with an explanation of what the groups will be encountering.

During the first phase of forming, Tuckman (1965) proclaimed the group would encounter the beginning stages of opportunities, challenges, and the outlined goals agreed upon by the team members. During this stage, members of the team are motivated, and well-behaved, and the formation of ground rules, team norms, scope of task, and roles begin to form (Tuckman, 1965).

The second stage of team development, storming, is where members of the group begin to voice their opinions and conflict may arise between the division of powers, roles, responsibilities, and various disagreements before any positive movement is made towards the overall goal (Tuckman, 1965). In addition, as the group begins to work with one another, team members begin to learn about individual working styles, and according to Tuckman (1965),

participants form opinions about the character and integrity of the other participants and feel obliged to voice these opinions if they find someone dodging responsibility or attempting to dominate the group. During this stage of development, tensions may rise, and struggles and arguments can occur that may ultimately be upsetting for the group.

Once the group can move past the storming stage, the third team development element is norming. Tuckman's model in the norming stage outlines that the group has now advanced towards group cohesiveness, arguments have been neutralized, and roles have been appropriately assigned (Tuckman, 1965). The team has aligned in agreement towards the common goal that is now shared, team members have agreed upon areas of responsibility, and previous interpersonal conflicts have been accepted to work towards success.

Tuckman's fourth phase of his group model is performing, where group members focus on achieving common goals with the group norms and roles established, and ultimately reaching high levels of success (1965). Moreover, the group has retained a high level of energy that is focused on the assignment at hand, the group has moved towards task performance support and the group's interpersonal conflicts have been resolved.

Tucker's (1965) model has become popular because of its ease of use. The model is explained as linear and has groups moving from one stage to the next in sequence. In addition, in the 1970s, Bruce Tuckman partnered with Mary Ann Jensen to add a fifth element to the model, adjourning (1977). In the fifth stage, adjourning, teams identify the completion of the task and the departure of the team. The final element of group development was an important step in the life cycle of the team to identify its separation (Tuckman, 1965).

Hackman's Effective Team Model. Harvard Psychology Professor, J. Richard Hackman published a book that contained 21 studies of teams with the help of 16 scholars who focused on

the elements which made teams perform effectively (Hackman, 1990). Furthermore, these teams were distinctly categorized into seven characteristics: top management groups, task forces, professional support groups, performing groups, human service teams, customer service teams, and production teams (Hackman, 1990).

Hackman (1990) declared three main dimensions that allowed teams to effectively perform. The first element was team productivity, which is needed to meet the demands of the service created by the team. The second dimension is the process that was created to increase teamwork to assist members in working together towards a cohesive unit. The third, and final dimension is the group's overall level of expertise. This allows the members of the team to incorporate a mindset of growth and enables members of the team to have their voices heard. In conjunction, the team needs to produce positive results and be able to meet individual and team satisfaction.

The importance of team structure was highlighted as an essential element of a productive team (Hackman, 1990). Furthermore, the author outlined three specific qualities that organizational working teams should possess. Team members should share a common purpose, and encompass a social system with boundaries, and organizational support to achieve effective results.

Hackman (1990) asserted that successful groups must also overcome three obstacles for ultimate effectiveness. First, the group must be knowledgeable, possess a diverse skillset, obtain the required energy to perform that task, and use the appropriate task performance methods that are relevant to the task taking place (Hackman, 1990). These three obstacles were a result of the assembled research team identifying issues from energy, talent, or strategy amongst effective teams.

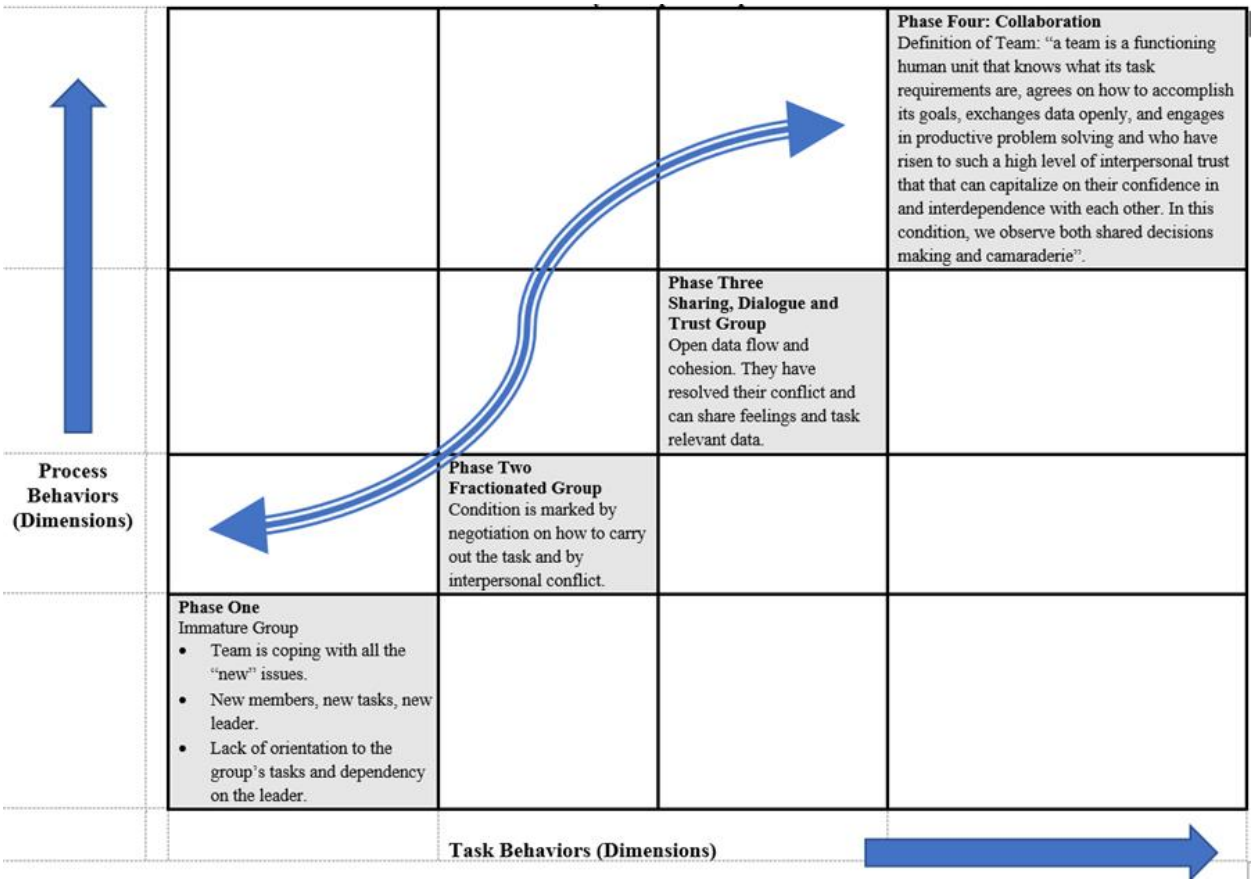
Team effectiveness development was identified in the research as Hackman (1990) outlined three team components: group composition, task structure, and team norms. The development of group composition importantly identifies the need for various staffing and the team's knowledge in various areas. The task structure allows the teams to identify a clear purpose and team expectations. Lastly, team norms create a system of member conduct, culture, and a uniform vision for achieving the team's goals (Hackman, 1990).

Jones and Bearley. John Jones and William Bearley (2001) created their team dynamics growth model based on years of research on effective teams. These researchers asserted that teams non-sequentially experience four phases: effective, sharing, fractionated, and immature teams (Jones & Bearley, 2001). They established that each of the phases is additionally based on two dimensions, the relationship between task and process. To move from one development stage to another, the group will ideally work with these two dimensions at the same speed, advancing from each of the stages to complete the full development of the group (Jones & Bearley, 2001). Furthermore, Jones and Bearley (2001) noted that not all teams perform at the same level, therefore, teams must consider various sequences because of repetition, transition, advancement, and regression. The model phase is a progression as described in Figure 1.

1. Effective Team
2. Sharing Group
3. Fractionated Group
4. Immature Group

Figure 1

Team Dynamics Growth Model



Note. Adapted from "Facilitating Team Development: A View from the Field," by J. E. Jones & W. L. Bearley, 2001, *Group Facilitation: A Research & Applications Journal, 3,* pp. 53-65. Copyright 2001 by J. E. Jones & W. L. Bearley.

The model from Jones and Bearley (2001) represents four different task behaviors along the horizontal axis and four process behaviors along the vertical axis within the two-dimensional system. According to Jones and Bearley (2001), the task conduct is viewed as problem resolution, open data flow, organizational, and guidance. Furthermore, process conduct is described as interdependence, cohesive, conflict, reliance, and often connected to relational

capabilities (Jones & Bearley, 2001). The model exhibits a continuous relationship between process and task as the teams work together from phases one to four.

Jones and Bearley (2001) stated that the behavior between process and task is designed to be developed simultaneously, and in return, an effective group displays a progressive behavior within both dimensions. The method behind a group of individuals becoming an effective team is when they can swiftly function as a unit within both dimensions concurrently while completing the outlined task.

According to Jones and Bearley (2001), the first team is referred to as the immature group as a unit, in which, the new identities and issues such as a new leader, new members, new tasks, and the group's lack of direction and leadership are being addressed. The level of trust within the team is at its lowest point due to the inexperience of the team, and in addition, uncertainty within the group can begin to form during this stage. In addition, the team becomes uncertain about tasks, roles, and duties due to leadership dependence (Jones & Bearley, 2001). During the exploration of effective teams, Jones and Bearley (2001) identified the members of teams identified uncertainty towards their assigned duties, timelines, and resources. Teams can pursue the next stage after the concerns of the team members have been addressed; individual group members can establish their voice; a clear purpose and team goals have been identified; and the team has agreed upon the overall vision, timeline, and resources allocated towards achieving their goal.

In phase two, the team begins to learn their tasks and duties, however, this phase is also accompanied by personal conflict derived from boundary conflict, personal agendas, and personality differences (Jones & Bearley, 2001). In addition, Jones and Bearley (2001) noted that phase two’s characteristics include the fight to establish expectations, anxiety, defensiveness,

coalition forming, competition for influence, autonomy, challenging leadership, recommendations being criticized, members not listening emphatically, and minimal tasks being completed.

Phase three, according to Jones and Bearley (2001) begins when the group members have given up their desire for power, and efforts towards influencing other people have subsided. In this phase, the researchers identified that members of the group will need to de-escalate personal issues with group members and neutralize conflict. Furthermore, the members of the group have agreed upon the strategy for the team goals within a shared vision, purpose, duties, and responsibilities (Jones & Bearley, 2001). Phase three is identified as open data flow for members to establish communication and task issues, whereas phase four begins to move towards team unity and increased levels of trust. In addition, team members in phase three have fine-tuned their ability to communicate, settle issues, and openly discuss task requirements with the establishment of group norms, shared respect and trust, group unification, cohesive decision-making, and active listening (Jones & Bearley, 2001). As the group begins to experience positive behaviors, it directly affects their ability to problem solve and to continue to evolve as a team (Harvey et al., 1997). In closing, phase three is a period in which members can feel relief from their prior experiences of distrust and anxiety and build upon relationships with open communication and common goals.

During the fourth stage, Jones and Bearley (2001) identified that team members have found increased levels of interpersonal trust, and interdependence, and have built confidence in one another. In conjunction, the team members can complete their assigned task requirements, negotiate on how to meet team goals, participate in productive problem-solving, and receive and offer data openly. As a unit, the members share decision-making processes, ultimately leading to

a cohesive team. The fourth phase has identified team characteristics such as effective decision-making, civil confrontation, productive problem-solving, interdependence, clear and honest communication, higher morale, and a sense of belonging (Jones & Bearley, 2001).

Larson and LaFasto's Study of Teams. Larson and LaFasto (1989) conducted a study to identify and describe seminal authors' previous research on team dynamics and effectiveness. Furthermore, Larson and LaFasto (1989) asked one important question: "What are the secrets of successful teams?" (p. 7). Furthermore, these authors used two primary questions in an interview to discover eight key characteristics of effective teams. Larson and LaFasto (1989) asked the following two questions to team members: (a) "what are the elements, features, and/or charcteristics of effective teams" and (b) "what creates the conditions when teams function ineffectively" (pp.18-19)? The interview process identified the following eight key characteristics of an effective team: (a) a clear, elevating goal; (b) a results-driven structure; (c) competent team members; (d) unified commitment; (e) a collaborative climate; (f) standards of excellence; (g) team rewards and celebrations; and (h) ethical leadership (Larson and LaFasto, 1989).

A clear, inspiring purpose is the first element of Larson and LaFasto's (1989) model framework. During their investigation, Larson and LaFasto (1989) identified that a clear and inspiring purpose was a clear indicator in effectively functioning teams, and in return yielded positive results; whereas ineffective teams often focused on other issues outside of the team's outlined clear purpose or goals. A second key finding is that a team with a clear purpose should also seek to inspire, challenge, and motivate the team members (Larson & LaFasto, 1989).

The second component of the model is for the teams to establish a results–driven organizational structure. Larson and LaFasto (1989) recognized team members need

organizational structure to effectively perform their roles and responsibilities. Furthermore, the authors learned that another key factor in a team's success was the ability to build trust during the decision-making process. Lastly, Larson and LaFasto (1989) identified that the decision-making process should be a shared responsibility between all members and that all members should feel valued and respected as individuals and as a unit. To enable a solution-driven structure, Larson and LaFasto (1989) asserted that teams should seek to establish clear roles and responsibilities, an efficient communication system, an individual evaluation tool and constructive criticism, and the utilization of fact-based judgment.

The third characteristic in Larson and LaFasto's (1989) model is the standardization of knowledgeable team members. Competent team members should possess the necessary skills to accomplish their given task, provide expertise, become valuable contributors to the team, and exhibit the ability to work well within the team (Larson & LaFasto, 1989).

Unified commitment is the fourth outlined element in the model and is explained to be the willingness to do anything to help the team reach success through dedication and loyalty (Lason & LaFasto, 1989). Furthermore, it was identified that in retrospect, ineffective teams did not display any elements of a collaborative spirit and were a key contributor to the team not reaching success (Larson & LaFasto, 1989).

The cultivation of a collaborative atmosphere was attributed to the fifth characteristic of Larson and LaFasto's model (1989). Collaboration is identified by Larson and LaFasto (1989) as the team's camaraderie that is based around the team's shared trust and results, and in return is best described as the relationship among the team members. Team morale was acknowledged as being closely connected to team morale. Larson and LaFasto (1989) discovered that when members of the team experienced distrust, their ability to achieve the outline objectives was

rarely met. In return, teams experienced poor communication, the formation of coalitions, and personal agendas began to develop.

The sixth component element of Larson and LaFasto's (1989) model is establishing and maintaining standards of excellence. During the study, Larson and LaFasto (1989) formed three conclusions on the subject of high expectations: (a) high expectations are essential for the team's inspiration, member engagement, and overall results; (b) team members are required to meet the standards in each of the three areas; and (c) the teams that were identified as the highest performers continuously reviewed the standards to meet the outlined goals and objectives.

Team rewards and celebrations were identified by Larson and LaFasto (1989) as the seventh characteristic of their model. Teams that did not receive the proper amount of support through resources and leadership backing performed poorly; whereas, teams who had support and resources were able to outperform those who did not. In return, teams that lacked support often displayed characteristics of low morale, votes of no confidence, feelings of dependency, and a loss of focus on the team's goals (Larson & LaFasto, 1989). Lastly, effective teams received support from leadership through team recognition and awards (Larson & LaFasto, 1989).

The eighth, and final element of the model was ethical leadership. Ethical leadership was showcased by leaders supporting transformational change, promoting individual talents, setting practical goals, establishing team morale, and helping build trust within the team (Larson & LaFasto, 1989). Lastly, ethical leadership built team loyalty though the belief that the team would be supported in their roles and responsibilities (Larson & LaFasto, 1989).

In conclusion, Larson and LaFasto (1989) identified eight key components of their effective team model. However, they believed the most important development of an effective

team is those who have a clear, inspiring goal; have highly skilled team members; and have high levels of expectations.

Lencioni's Team Model. Patrick Lencioni (2002) created their team model after several years of dedication and observation as an organizational consultant. In this time period, Lencioni (2002), determined various foundational characteristics that formulate a successful team. In return, they created their team model, also known as the five dysfunctions of teams. Lencioni (2002) took a different approach in creating this team model. To make the team model simplified, Lencioni (2002) wrote the model in the form of a fable for all readers to easily understand.

Lencioni's (2002) model was based on the five negative behaviors that ultimately contribute to a dysfunctional team: confidence, conflict, decision-making, accountability, and collective results. In addition, it was noted that team members who fear being vulnerable with team members will stall the ability of teams to build trust. Therefore, the teams that were observed being fearful of being vulnerable to one another displayed behaviors such as a lack of confidence, trust, and cohesion (Lencioni, 2002).

The first dysfunction noted by Lencioni (2002) is the ability for team members to feel confident. Confidence allows members within the team to have the psychological boost for team interaction without fear of repercussion or poor interactions (Lencioni, 2002). Furthermore, it was noted that teams tend to use counterproductive time, energy, and negative emotions when confidence has not been instilled within the team. Lastly, if team members are not willing to engage and interact with one another with authentic trust, the team will not be able to continue with positive dialogue and engage in constructive conflict throughout its lifecycle (Lencioni, 2002). To counteract the dysfunction of confidence within the team, Lencioni (2002) encouraged

team leaders can incorporate an environment that is conducive to trust by first being vulnerable themselves and avoiding punishment for members being honest and trustworthy.

Lencioni (2002) attributed the third dysfunction of a team to the lack of commitment, which prevents team members from making choices that they will follow. The lack of direction within a team will result in a negative impact on engagement, and roles and responsibilities begin to become unclear (Lencioni, 2002). Teams that lack commitment often display a lack of confidence and fear of failure, excessive scrutiny, decisions being revisited continuously, uncertainty among the team members regarding direction and priorities, and widespread doubt among team members. Lencioni (2002) contributed that teams that display commitment also have a clear purpose around the team's direction and priorities, opportunities are accepted, and team structure is built around shared objectives.

The fourth dysfunction is avoidance of accountability, which prevents the team from holding one another accountable (Lencioni, 2002). Accountability conversations can be difficult to hold, however, they are important for the team to push forward toward success. In teams that seek to avoid accountability, Lencioni (2002) noted they display signs of missing deadlines, mediocrity performances, and the team leader is the only individual who seeks discipline. In retrospect, Lencioni (2002) contributed that teams that possess accountability have challenges identified swiftly, team members seek improvement, respect is established, performance standards are identified and met, and lastly, team members hold one another to higher expectations.

The fifth, and final dysfunction Lencioni (2002) recognized as a to inattention to results. These teams display traits of inattention to results when they are focused on their own individual accomplishments, competitors are rarely defeated, members are easily distracted, and there is a

stagnated team (Lencioni, 2002). When members do not have the team goals identified and carefully communicated, they are not motivated to excel. Lastly, Lencioni (2002) commented that teams that display attention to results are found with higher retention rates, success is celebrated, failure is used as a learning experience, and distractions are evaded.

Harvey and Drolet's Team Model. Harvey and Drolet (2006) fashioned their model during their dissertation study and collaboration and consulted with teams after a substantial review of the literature. During their study, Harvey and Drolet (2006) identified that high-performing teams display frequent characteristics to enable them to become highly effective teams. During this study, Harvey and Drolet (20606) figured out their team's model on team dynamics by identifying seventeen characteristics of highly effective teams.

***Characteristics of Effective Teams*.** Harley and Drolet (2006) identified four crucial characteristics that effective teams possess: purpose, composition, interaction, and structure and context. Teams that can possess these can create an identity for themselves and a collected belief towards their mission. Harvey and Drolet (2006) noted that when a group o)f individuals hold a shared vision and belief, they create a common dedication toward the team's goals and responsibilities. The team's purpose allows them to share a common identify and)value, shared responsibilities, and the capability to be successful. Effective teams establish an organizational vision that drives the direction of the team toward a clear purpose (Harvey & Drolet, 2006).

Team composition was identified as an important characteristic contributing to team success through the clarification of team membership, public recognition amongst individuals, shared roles and responsibilities, and identified team roles (Harvey & Drolet, 2006). To be a highly effective team, all members must be fully aware of the group composition, team membership, and team responsibilities. In addition, teams should be aware of the skillset of each

member and include balanced roles and opportunities for team members to strive and showcase their abilities (Harvey & Drolet, 2006)

The third characteristic of Harvey and Drolet's (2006) effective team model is interactions. Harvey and Drolet (2006) noted that highly effective teams hold an increased level of communication through listening and inquiry, transparency, flexibility, a healthy level of stress, and a growth mindset. In return, all of these characteristics combine to allow each member to feel valued and ultimately lead to high levels of trust.

The fifth, and final element of Harvey and Drolet's (2006) model is structure and context, which encompasses the team forming clarity to the group structure, identifying and mitigating outside forces, and preserving time to be attentive to the group tasks. Furthermore, intermittently taking time to be mindful and founding stronger relationships and task completion processes (Harvey & Drolet, 2006).

Norms. Harvey and Drolet (2006) noted that norms are a meaningful element in their model, and these are the behaviors that are commonly accepted by the people in the organization. The way the members of the organization, or the team conduct themselves is set forth by the outlined norms. Harvey and Drolet (2006) noted that teams that displayed high levels of effectiveness developed and implanted norms by transforming team differences into collaborative cohesiveness. Team norms are a set of shared commitments that all team members agree to and should be posted so they are visible to the team (Harvey & Drolet, 2006).

Types of Conflict. Conflicts were constructed into five categories by Harvey and Drolet (2006): perceptual, tangible, boundary, interpersonal, and values conflict. Each of the five identified conflicts was organized by their level of complexity. Conflict is a natural event in any team, however, if not resolved each of these conflicts could result in complexity and decreased

production. According to Harvey and Drolet (2006), perceptual conflict is a result of misinterpretation or differences between team member's viewpoints, which lead to mutual misunderstandings. To help avoid perceptual conflict, members should seek clarification to avoid the incident escalating.

Tangible conflict, according to Harvey and Drolet (2006), is a conflict that involves different stances on time, money, benefits, and personal issues. To help avoid these issues being pushed forward, Harvey and Drolet (2006) suggested that collective bargaining skills and facilitating structured conversations about these issues could be useful. The third type is boundary conflict which is created by a person or entity encroaching into one's personal space or set boundary (Harvey & Drolet, 2006). The fourth type of conflict is interpersonal conflict, and according to Harvey and Drolet (2006), this is a result of another kind of conflict resolution that was not resolved. In these scenarios, if the conflict is not resolved in a timely manner, relationships can be tarnished beyond repair. The fifth, and final conflict in Harvey and Drolet's (2006) model is values conflict. This type of conflict is the most complicated type of conflict to categorize because of the complex values they encompass such as beliefs, tenets, principles, justice, influence, and inclusion (Harvey & Drolet, 2006). This type of conflict could arise from increased stressors from viewports on the team's directions, goals, objectives, and available resources (Harvey & Drolet, 2006).

Synthesis of Team Development Models

This section provides a synthesis of the seminal authors' development models reviewed in the prior section.

Rationale for Teams. Organizational change and performance in today's society generally require the use of teams to spearhead these efforts, according to researchers (Hackman,

2002; Harvey & Drolet, 2006; Katzenbach & Smith, 1999; Larson & LaFasto, 1989). Teams can be successful in discussing the various methods, agreement on strategies and practices, and setting the foundation for the team's responsibilities through the team's framework (Hackman, 1990; Katzenbach & Smith, 1999). In addition, seminal authors have noted that teams are necessary to navigate complex issues and decisions to meet shared goals and objectives (Jones & Bearley, 1994; Larson & LaFasto, 1989; Lencioni, 2002).

Clear Purpose. A clear purpose is vital for the team to turn their efforts and purpose towards the outlined objectives at hand (DuFour et al., 2010). Effective teams have been identified as having as well-defined purpose that enables these members to have a clear direction and purpose (Harvey & Drolet, 2006). Having awareness of the team's objectives with a clear purpose has been identified in Parker's Characteristics of Effective Teams (2008). Seminal authors have proposed that a team is a restricted number of people working towards a shared goal (Hackman, 1990; Harvey & Drolet, 2004; Katzenbach & Smith, 1999).

Conflict and Problem-Solving. Five different types of conflict have been noted by authors Harvey and Drolet (2005), and this includes value conflict, tangible conflict, interpersonal conflict, boundary conflict, and perceptual conflict. Each of these types of conflict can play a role in teams and should plan an effective strategy to overcome each. Value conflict refers to the struggles within a team over beliefs, tenets, or principles and can be directly related to individual convictions on faith, independent of evidence or logic. In most instances, value conflicts are difficult to solve and rather come to a fundamental agreement of understanding (Harvey & Drolet, 2005). Tangible conflicts describe the issues that arise from elements that can be measured, divided, counted, or shared. For example, a budget within a team could be a tangible conflict that could arise (Harvey & Drolet, 2005). According to Harvey and Drolet

(2005), interpersonal conflicts develop from negative feelings about individuals and have been noted to be the second most difficult to resolve within an organization. Boundary conflicts can be both boundary penetration or boundary expansion, and if left unresolved can lead to interpersonal conflict. For example, boundary penetration is when a team member steps into another's domain, or territory and now the individual feels violated. Boundary expansion is when a member needs help, and the team members do not step in to help (Harvey & Drolet, 2005). Lastly, perceptual conflicts are marked as the easiest to resolve and are commonly mutual misunderstandings (Harvey & Drolet, 2005). Team members can avoid continuous perceptual conflicts by creating an atmosphere of open communication and trust. Effective strategies to help teams resolve conflict have been identified by renowned researchers Jones and Bearley (2001) such as addressing conflict rather than avoiding it, shared responsibilities, and creative problem-solving.

Team Transparency and Trust. Establishing trust and transparency within the team structure is a pinnacle event to further the team's ability to work together and ensure the overall effectiveness and success of the team (Jones & Bearley, 2004; Kahane, 2006; Katzenbach & Smith, 1999; Larson & LaFasto, 1989; Lencioni, 2002; Parker, 2008). In addition, trust has been demonstrated at both the interpersonal level and within the team structure for the team to excel effectively and efficiently (Harvey & Drolet, 2006; Jones & Bearley, 2004). Trust and transparency have been identified as the most important stage of team development and notably has been most successful within teams when members had an atmosphere of open communication and constructive growth, respect, and attitude (Hackman, 1990; Lencioni, 2002; Parker, 2004).

Team Norms. Team norms have been noted by several scholars to be developed and maintained to standardize team member behaviors and to guide the group through conflict (Hackman, 1990; Harvey & Drolet, 2004; Larson & LaFasto, 1989; Parker, 2008). In addition, team norms should be permanently listed in meeting agendas and regularly visited to ensure compliance and alignment with the team's mission (DuFour & DuFour, 2012; Kegan & Lahey, 2001). This standardization of practices is no different for a project management team in construction and teams should follow the outlined practices.

Organizational Support. Teams that were supported with organizational support showcased an increased positive impact on their capabilities (Hackman, 1990; Jones & Bearley, 2001; Larson & LaFasto, 1989). Teams are developed to help achieve the organizational goals, therefore, is it vital that the team is supported by the organization to meet the strategic goals set. In construction project teams, the team's typical overarching goal is to complete the project on time and within budget. In return, the team will need the support of leadership by the necessary means to carry out the project.

Goals and Objectives. Teams are formed for a specific purpose, to achieve set goals and objectives. Furthermore, according to Katzenbach and Smith (1999) and Harvey and Drolet (2004), teams share common strategic goals and objectives. Parker (2008) underlined the value that goals and objectives have for teams in their 12 Characteristics of Effective Teams model. In addition, Jones and Bearley (1994) noted the importance of team goals and objectives to align with their progress from one stage to the next. Lastly, the fifth dysfunction of teams explained the inattention to results was a direct result of members of the team not focused on the team's goals and objectives but rather on their own personal needs (Lencioni, 2002).

Structural Team Dynamics. Team structural dynamics have been recommended to be made up of smaller numbers to allow for more interaction (Hackman, 1989; Harvey & Drolet, 2006; Katzenbach & Smith, 1993; Larson & LaFasto, 1890; Parker, 2008). In addition, these authors added that well-defined roles and responsibilities within a team will enable the team dynamics to be more successful and decrease conflict. In project management teams, members are more likely to help others when the team is built on structure and cohesion. Meeting agendas, meeting minutes, team policies, and written documentation play a crucial role in the team's ability to build structural dynamics (Larson & LaFasto, 1989).

Theoretical Framework

As stated previously in Chapter I, due to the nature of the study, Parker's 12 Characteristics of Effective Teams Model was downsized to six of the most important by project manager team leaders. This method was determined by referring to a Project Manager expert panel for their recommendations of reducing the number of characteristics in conjunction with project management. Described next are the characteristics and supporting evidence of these attributes.

1. **clear purpose:** The members of the team must understand and acknowledge the related vision, mission, goal, or task that has been defined and accepted by all team members with an action plan to include a statement of need, specific outcomes, and budget (Parker, 2008). In the beginning stages of a team, it has been noted the importance of a clear and inspiring purpose, shared team beliefs, and team objectives (Harvey & Drolet 2006; Katzenbach & Smith 2003; Larson & LaFasto 1989). In addition, several authors have stated the importance of teams having the knowledge and direction toward the goal of

establishing strong relationships within the team (Katzenbach & Smith, 1999; Parker, 2008; Tuckman, 1965).

2. **participation:** Parker (2008) noted the positive importance of teams that create an overall atmosphere of inclusion for all members to participate and discuss. Not all team members will participate in the same manner, however, nonverbal communication of nodding, leaning forward, and taking notes are forms of participation. In addition, team members who stay actively engaged are more likely to have valuable input to the group.
3. **listening:** Parker (2008) highlighted that the single most important factor that distinguishes effective teams from ineffective teams is the ability to listen to one another. Parker (2008) continued by recommending that all members of the team be expected to use effective listening techniques such as questioning, paraphrasing, and summarizing to get out ideas. In addition, teams should seek to establish team norms of listening that include withholding judgment until all the data and facts are present. Lastly, Parker (2008) emphasized teams that use active listening can maximize their contributions toward the team's efforts.
4. **consensus decision:** The centerpiece for effective teams is to reach a consensus decision, especially for the most important decisions by openly discussing everyone’s ideas without formal voting practices or easy compromises (Parker, 2008). This characteristic uses a problem-solving approach for conflict resolution, and consensus is the technique that is used to reach an agreement about the problem statement and the recommended solution (Parker, 2008).
5. **open communication and trust:** Parker (2008) stressed the importance of team members freely expressing their opinions on the team’s tasks, as well as the group’s

operations, with a high level of trust, which is vital to the team's success. Kahane (2006) highlighted that trust implies that people will keep their promises, speak truthfully, keep their word, and act morally. To achieve this level of trust and communication, communication methods can also take precedence outside formal meetings to achieve this desired goal (Parker, 2008).

6. **clear roles and work assignments:** Every title and position are important, therefore, there must be clear expectations about the roles that are to be played by each team member. Clear assignments are made, accepted, and carried out by everyone included on the team. Work is also to be fairly distributed among team members. Role clarification is especially important when a new team forms, a new member joins the team, or there is conflict in data collection and role assignments (Parker, 2008).

History of the DOD Project Managers

Project management can be dated as far back as the Egyptian era, however, in the early 1950s the Navy deployed project management methodologies in the Polaris project (Carayannis et al., 2003). In fact, the success of the Polaris project from 1956 to 1961 has been attributed to some of the core project management concepts today. In return, the success of this method allowed the Department of Defense to begin to incorporate project management principles throughout the 1960s and 1970s to manage large-scale and budget projects to ensure success (Carayannis et al., 2003). The Department of Defense began to create software to assist in managing large projects to help create realistic schedules and critical paths for the earliest completion dates (Smith, 2019).

Project management wasn't always viewed as a true profession and took years of unifying standards and management professionals to propel the industry forward. The

Department of Defense created its methodology in project management that used work breakdown structures that cover project-end objectives, major product segments of the end objective, and decomposed components (Smith, 2019).

Over time in the Department of Defense, the constraints within the defense budget became more serious and project management had to become more innovative to system engineering by delivering products within cost, schedule, and scope targets (Page, 2017). While the DOD did not invent systems engineering, they used these concepts to incorporate their needs and over the next several decades they used strategic life-cycle cost estimates for budgets, procured advanced integrated systems, and delivered on several high-profile projects such as the F-18, F-35, and several Global Positioning Satellite systems (Page, 2017).

Project Manager Characteristics

The project manager is commonly known as the leader of the project, therefore, many of the attributes that make great leaders also carry over into project management. According to the Project Management Institute (2022), the top five qualities of a success project manager are:

- **strong leadership skills**: An effective leader in project management has the ability to inspire and motivate team members to ensure the team thrives and achieves the goals set forth.
- **great communication skills**: Project leaders must be able to connect and effectively communicate with the team to set standards, clearly explain roles, tasks, and responsibilities, and navigate conflict.
- **the capability to work under pressure**: Each project is faced with its unique set of constraints, obstacles, and unforeseen circumstances. Therefore, the project manager

must be able to navigate and handle these issues under control and ensure the team members remain calm and focused on the goal.

- **great decision-making**: Project managers are faced with making several different decisions throughout the project life-cycle. Great decision-making typically is developed through experience and over time.
- **technical expert**: The project manager must have a strong understanding and working knowledge of the complexity of the project and what personnel can strive for in each role. In addition, project management software such as Primavera is essential to be highly effective (Whitten, 1996).

Project Management in the DOD

Project management in the Department of Defense is often confused with Program Managers. According to Monaghan (2023), a project manager in the DOD is responsible for the overall planning, initiation, execution, and closure of a project. Additionally, project managers should have a variety of skills including the ability to lead and manage diverse groups of people, resolve conflicts, and create and execute project plans. Excellent communication, management, organizational skills, cost estimating, budgets, scope development, and DOD money allocation are all key critical skills for a DOD project manager (Monaghan, 2023).

According to Gadeken (2015), the Defense Acquisition University (DAU) has been the main source of advanced Project Management training and education since 1971. For example, the DAU has three levels of certification that can be achieved through a blended requirement of online instruction, classroom training, and hands-on experience (Gadeken, 2015). To reach Level III certification in the DOD, a project manager must complete a minimum of 346 hours of online instruction, 27.5 classroom days, and four years of experience.

The Department of Defense has long practiced the train-as-you-fight doctrine, and in return, the organization has incorporated the PMT-401 curriculum that uses project management case studies to develop critical thinking elements, standards, and intellectual traits (Gadeken, 2015). These training requirements are important because many of the DOD projects feature cross-functional teams. Project managers must balance cross-functional teams that consist of members from different military branches, civilians, and the outlined series of training that require reflection, feedback, and continuous learning (Gadeken, 2015).

According to Wood (2017), a long-tenured project manager in both the public and private sectors, the biggest differences for project management teams in the DOD are the lack of profit motive, failure without repercussions, and tenured employee status. Overall, the cultural differences in managing projects in the Department of Defense are what makes the difference. For example, the private sector is heavily competitive and when budgets, schedules, and projects do not meet the milestones, employees can easily be let go. In the DOD, missing these key marks does not warrant immediate grounds for termination. Through the research, it has apparent that the DOD has struggled with teams and project management, which has resulted in overages in time and expenses.

Gaps in Research

Department of Defense's present and future employees should benefit from the findings of this study. The development of team dynamics, team engagement, conflict resolution, and trust development are all key concepts that have not been explored enough in DOD construction teams. There is not enough research on how project managers can develop trust, team development, and critical decision-making within teams that has yet to be explored, and how this can impact the future of project management in the Department of Defense. The design of this

study was geared towards informing DOD project managers on how to effectively work with project teams, manage conflict, and become more effective leaders on construction projects.

Synthesis Matrix

A synthesis matrix of the literature supporting this study in included in Appendix G.

Summary

Effective team-building strategies and dynamics are the fundamental elements that produce a highly effective and mission-oriented team. These highly effective teams seek to focus on a clear purpose, clear roles and assignments, active listening, and participation. The remaining chapters of this study will examine and analyze the lived experiences of DOD project leaders as they build highly effective teams. There is a long history of information about teams and how the DOD operates. However, there is a scarcity of research on how DOD project leaders build these teams, navigate conflict, and build trust to develop a highly effective team.

Chapter III: METHODOLOGY

Overview

This section contains the methodology employed in this qualitative multi-case study research design about team dynamic challenges and team-building strategies Department of Defense project management team leaders used to lead successful construction projects based on Parker's 12 Characteristics of Effective Teams Model. The study examined Department of Defense project managers who had three years of Department of Defense experience leading a team of four or more individuals and completed at minimum three construction projects. There has been limited research on Department of Defense project managers. The goal of the research is to use Parker's 12 Characteristics of Effective Teams Model to examine the use of various dynamic team-building strategies as project managers navigated through team dynamics challenges and complex decisions to lead successful construction projects.

This chapter presents the methodology that best supported the purpose and research questions of this qualitative multi-case study. Furthermore, this chapter will explain the reasoning and selection of the research design and describe why the most appropriate research method was a qualitative research multi-case study. In addition, the chapter will present the population, target population and sample, prior to discussing the instrumentation. Following these sections, the reliability and validity, as well as the data collection methods and analysis will be described. The chapter concludes with a discussion of the study's limitations and a summary.

Purpose Statement

The purpose of this qualitative multi-case study was to describe how project management team leaders explained the most useful Parker team characteristics as they worked with their team to make complex decisions leading to successful construction projects. In addition, the

purpose of this study was to explore the challenges Department of Defense project management team leaders' experienced as they made complex decisions leading to successful construction projects based on Parker's characteristics of effective teams. Additionally, the purpose of this study was to identify and describe the team-building strategies Department of Defense project management team leaders used as they made complex decisions leading to successful construction projects based on Parker's Characteristics of Effective Teams Model. Lastly, this study will describe the recommendations Department of Defense project team leaders described for how to build teams as they discussed complex decisions leading to successful construction projects based on Parker's Characteristics of Effective Teams Model.

Research Questions

1. What challenges do Department of Defense project management team leaders experience as they make complex decisions leading to successful construction projects?
2. What team-building strategies do Department of Defense project management team leaders use as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model?
3. What do project management team leaders describe as the most useful Parker team characteristic as they work with their teams to make complex decisions leading to successful construction projects?

Research Design

This study employed a qualitative research design using multi-case interviews and artifact collections, as it was determined to be the suitable research method to address the purpose and the research questions. A qualitative multiple case study research design was applied to describe the team dynamics and team-building strategies that Department of Defense

project managers used to lead successful construction projects and navigate complex decisions. According to Patton (2015), qualitative research highlights the personal experiences of the population of the study and the researcher operates as the instrumentation. The study utilized qualitative research methods as the study involved an investigation of multiple perspectives unique to the experiences of the target population.

Qualitative methods and the associated data are used by participants to communicate and capture a story (Patten & Newhart, 2018). In addition, the overall goal of qualitative research is to obtain a deeper comprehension of the topic by reporting multiple perspectives (Creswell, 2015). The method of qualitative research often seeks into the stories of individuals to capture and understand their perspectives (Patton, 2005). For this study, the research goal was to gain a deeper comprehension of the lived experiences of DOD project managers and how they built teams to lead successful construction projects based on Parker's Characteristics of Effective Teams (Parker, 2006).

The direction of qualitative research methods is to gather multiple unique perspectives about the phenomena being studied from the target population through the stated research questions, in direct relation to the target population and the research questions. According to Patton (2015), qualitative research collects data to address the research questions by using fieldwork, in-depth interviews, field observations, and document analysis. Department of Defense project managers face an array of challenges in addition to building and leading teams toward successful construction projects. The research design was developed to seek out the lived experiences of DOD project managers and the various team-building strategies that developed dynamic and successful teams. The input provided by participants provides future solutions to DOD project teams as they build dynamic teams to execute construction projects.

Qualitative Multi-Case Research Design

After determining that qualitative research was the most appropriate method for this study, various qualitative methods were researched as identified by Creswell and Poth (2018) including multi-case studies, hermeneutics, ethnographical, grounded theory, and phenomenological methods. These research designs were carefully analyzed and it was decided that the multi-case study was most suitable for the outlines of the study. The multi-case study was chosen by the researcher to best support the objective of analyzing and capturing the team dynamic challenges and strategies that DOD project managers use to navigate complex issues and build successful dynamic teams. There has been very little research on Department of Defense project teams and their lived experiences with building teams. Therefore, deploying the multi-case design is an effective way to collect in-depth data from project managers that are unknown at this time.

According to Creswell and Poth (2018), a case study research design is a qualitative approach in which the investigator explores a real-life contemporary bounded system (case), or multiple bounded systems over time, through detailed, in-depth data collection involving multiple sources of information such as interviews, material, documents, and reports that lead to case description and case themes. For this multi-case study, the bounded system is the California Department of Defense installations that incorporate the location, scope, size of projects, and history of military installations. This study reviewed vital and relevant publicans and news article artifacts such as the challenges to building complex construction projects, the role the project managers held, and the dynamic challenges of each project. Furthermore, multi-case studies are used for the purpose of understanding a phenomenon as well as the results for practical knowledge, the possibility of program and policy changes, and other applications (Patton, 2015).

The researcher used the multi-case study to obtain the team-building success strategies by DOD project managers.

This researcher interviewed DOD project managers and in addition, reviewed artifacts that are directly relevant to the outlined research questions. The artifacts were assessed to the interview findings and in return, improved the validity of the study through the data triangulation process. In summary, the researcher conducted an in-depth examination of the experiences of six Department of Defense project managers in the state of California to attain a greater understanding of the team-building strategies DOD project managers use to build dynamic teams for executing successful construction projects.

Population

The population of a research study represents the total group of elements or cases, which may be individuals, objects, or events, that conform to specific criteria which intend to generalize the results of the research (McMillian & Schumacher, 2010). Cresswell and Gutterman (2019), defined populations as groups that share common characteristics that differentiate them from one another. The population for this study was (DOD) Department of Defense project managers. The Department of Defense employs approximately 3.4 million service members & civilians, staged in 4,800 sites, in over 160 countries (Congressional Research Service, 2023). In the Department of Defense, construction team leaders, or project managers are charged to ensure the planning and delivery of construction projects are completed on time and within budget. Project Managers can have varying experiences and recommendations based on their geographical location, the size, and scope of projects, and the size of the project teams allocated to each construction project. Dynamic case studies were utilized in this study to take a deeper dive into the various project manager requirements across

the Department of Defense. In Chapter IV, the dynamic cases will be constructed based on the information in the dynamic case studies that directly relate to the purpose of the study.

There is at least one project manager at every military base, and there are 220 military bases worldwide (Congressional Research Service, 2023). Therefore, the study's population was 220 DOD project managers around the world. In some instances, there are multiple project managers for different military bases, depending on the requirement. Given this large population, a smaller population was needed as the resources of time and staff were not sufficient to study this many project managers. Therefore, a smaller target population was used for this study.

Target Population

The target population for the study was established by limiting the population of this study to Department of Defense project managers in the state of California. According to Creswell and Gutterman, (2019), a target population is the actual list of sampling units from which the sample is selected. For this study, the target population identified 32 military installations; thus, the target population for this study was 32 Department of Defense project managers (Bedi et al., 2022). While looking at California only, Department of Defense project managers reduced the overall population from 220 worldwide to 32 for California. This was still too large a population for the resources available for this study. Consequently, a sample of this target population was chosen.

Sample

As stated in the target population description, 32 was too many participants for this study, therefore, a sample was needed. Thus, a purposeful sample criterion was created to obtain a sample from which the findings of the study would generalize. To achieve this sample, first, the researcher established purposeful sampling criteria. Purposeful sampling allows the researcher to

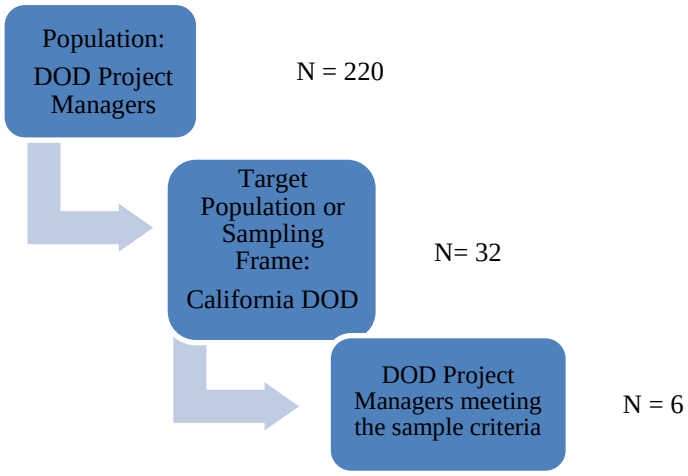
select particular elements from the population that will allow for the relative information to be accurately represented (McMillian & Schumacher, 2010). Furthermore, purposeful aligns with the purpose statement and research questions for the study. The influence and power of qualitative purposeful sampling originates from the emphasis on the in-depth understanding of the specific information-rich cases (Patton, 2005). The researcher used specific criteria to achieve information-rich cases for this study that is described in the sampling participant selection process.

Sample Size

In this qualitative study, the group of subjects or participants that the data are collected from is referred to as the sample (McMillian & Schumacher, 2010). According to Patton (2015), there is a lack of uniform guidance on determining the exact same size for qualitative research methods. In addition, Patton (2015) goes on to note the use of targeted sample sizes can be justified by relevant instances of information in conjunction with the questions investigated. The determining factor to finalize the sample size was an intellectual judgment of the researcher based on the logic of making meaningful comparisons to enable the development and testing of the explanations (Mason, 2010). In addition, the sample size was influenced by the sample selection process elements such as availability due to remote locations and classified information sharing restrictions. Stake (2006) stated that 2-3 cases do not provide sufficient evidence, and case studies will be limited if fewer than four, or more than 10 cases are chosen by the research team. The sample for the intended purposes was six Department of Defense, project managers.

Figure 2

Population, Target Population or Sampling Frame, and Sample Graphic



Sampling Participant Selection Process

To gain a sample from the target population, three sampling methods were chosen. First, the purposeful sampling criteria were created, followed by reputational sampling, and lastly, convenience sampling was used. Creswell (2014) noted that purposefully selecting participants refers to selecting individuals, or organizations who have specific characteristics.

For this study, purposeful sampling criteria were established to help identify the population of Department of Defense project managers. According to Patton (2002), purposeful sampling is a selection of subjects who can assist the researcher in gaining knowledge and understanding of a specific research topic. Furthermore, the purposeful sampling outlines allowed the researcher to select specific elements from the population that will better represent the preferred topic of interest (McMillian & Schumacher, 2010). First, the purposeful sampling criteria was developed in the following ways: the participants of this study must have met four of the six purposeful sampling criteria. The purposeful sampling criteria are summarized as the following: (a) department of Defense employees under the project manager umbrella for at least three years; (b) led a team of four or more individuals on a construction project; (c) completed at minimum three

construction projects from start to finish as a DOD project manager; (d) project managers who had a Bachelor's degree or higher in the project management field such as Project Management, Construction Management, Engineering, Architect, etc.; (e) project managers who have completed and held a Project Manager Professional (PMP) certification; and (f) project managers who have successfully obtained a Professional Engineering license (P.E.)

The second sampling method used was created by using reputational sampling of Project Management experts who were knowledgeable in the phenomenon of the study (Patton, 2015). The researcher used the reputational sampling method by utilizing the support of these project management experts within the DOD project management community to identify potential participants. Three Project management experts were asked to identify potential subjects who fit the description of the purposeful sampling criteria outlined in this study.

David Lin, Deputy Commander of the 60th Civil Engineering Squadron at Travis Air Force Base, is a tenured Department of Defense employee who first started working in project management at the Air Force Academy in 1996 and has since been part of 12 DOD installations. At the time of this study, Mr. Lin oversaw 16 project managers, and over 120 government employees, and was well-connected in the project management community. At the time of this study, Franklin Fernandez, Supervisory Engineer for the Resident Officer in Charge of Construction (ROICC) in Northern California, supervised 12 project managers and over 40 employees in the construction sector. Mr. Fernandez was serving in the United States Navy Reserves as a Naval Officer in the Civil Engineer Corps. Lieutenant Commander Fernandez, or Mr. Fernandez served over 40 years total between civil service and military in the project management community and was fully immersed in this sector. The third project manager expert was John Coon, Chief Engineer for the Naval Facilities Engineering Command Southwest

(NAVFAC). NAVFAC Southwest is home to over 3200 employees who support the planning, engineering, design, construction, and acquisition of real estate in California, Nevada, New Mexico, Utah, Arizona, and Colorado. Before becoming Chief Engineer, Mr. Coon spent 30 years in the project management sector for the Department of Defense and has kept in close contact with colleagues throughout this time.

These three project management experts provided recommendations of potential subjects who met the purposeful sampling criteria set forth. In conjunction, the researcher cross-referenced the participants who were provided by experts by reviewing resumes, and LinkedIn profiles, and lastly by contacting the Human Resources department.

Lastly, the researcher used convenience sampling based on project managers who were interested in the study. According to McMillian and Schumacher (2010), convenience sampling is the process of sampling based on a group of subjects who are accessible or expedient. In this instance, the researcher was able to obtain eight subjects who were nominated by the reputational sampling method, met the purposeful sampling criteria, and were interested and available for the study through convenience sampling.

The process for contacting the sample population is outlined below:

1. The researcher contacted the three project management experts to help assemble participants who met the purposeful sampling criteria.
2. The researcher provided the project management experts with an overview of the study, the purposeful selection criteria, and Parker's Characteristics of Effective Teams.
3. The project management experts identified 12 potential participants to contribute to the study, of which six were chosen by the researcher based on their willingness to participate.

4. The researcher contacted all 12 of the participants and asked for validation of outlined criteria for purposeful sampling.
5. Six of the 12 participants were not able to be part of the study due to time constraints and availability under convenience sampling.
6. The researcher contacted all six of the participants by phone to explain the purpose of the study, their contribution to the field, and that their identity would be hidden. In addition, an invitation letter was emailed to the participants (Appendix A).
7. After the participants agreed to participate and the interview was scheduled, the researcher emailed the following documents to the participants: (a) an invitation to participate letter (Appendix A), (b) a copy of the research participant's bill of rights (Appendix B), (c) an informed consent form for the participant to sign and return to the researcher before the interview (Appendix C), (d) an interview protocol and script to be reviewed by participants before the interview (Appendix D), and (e) an audio release form for participants to sign and return to the researcher before the interview being started (Appendix E).

The primary objective of the research was to obtain a better comprehension of the lived experiences of Department of Defense project team leaders and the dynamic team-building techniques leading complex construction projects. The required criteria for participant selection were modeled to ensure the highest level of quality data to be provided for the research.

Instrumentation

A qualitative multi-case study methodology was used to collect data in the form of interviews and artifacts, which aligned with the research questions regarding Department of Defense project managers and building effective teams. In a measured effort to enhance the

study's validity, the researcher conducted an extensive review of teams prior to collecting data for the study. Thereafter, a synthesis-matrix was used to summarize the literature used to support the study in Appendix G.

The researcher conducted a comprehensive review of the literature on all team models in the field. After an extensive review, Parker's Characteristics of Effective Teams was chosen to best represent the team's models when leading Department of Defense project teams (Parker, 2006). Furthermore, expert Project Managers helped choose the project team leader characteristics from Parkers's model that were most useful. Based on the expert review, clear purpose, participation, listening, consensus decision, open communication and trust, and clear roles and work assignments were chosen to be the most useful characteristics of effective teams from Parker's team model. The interview questions were developed based on the six selected characteristics in Appendix D. The expert project managers in return reviewed the interview questions and based on their feedback, the research questions were modified to best fit the study.

To enable data triangulation, the researcher used semi-structured and open-ended interview questions with a combination of artifact reviews for supporting documents. Patten (2012) stated instruments were the measurement tools created and used to construct research gathering data. Furthermore, if the instrumentation was not used, a threat to internal validity could occur and affect the results of the data (McMillian & Schumacher, 2010). Case studies are often conducted by using a variety of evidence such as observations, interviews, and reviews of pertinent documents (Campbell et al., 2015). Due to the nature of the study, it was determined that observations would not be the best use of instrumentation.

Interviews were used to capture the lived experiences of the participants. Furthermore, the use of interviews was the method that was best suited to capture the lived experiences of

Department of Defense project managers leading successful construction projects based on Parker's Characteristics of Effective Teams Model. The researcher believed that interviews would provide the highest quality data to help answer the researcher's questions which would be supported by artifact documentation, analysis, and review. The use of interviews allows the researcher and participant to engage in a conversation solely focused on questions related to the research study (deMarrais & Lapan, 2004).

To ensure that Parker's Characteristics of Effective Teams model were identified and discussed, the researcher developed seven semi-structured, open-ended interview questions to inform and address the study's three researcher questions. The researcher ensured that Parker's model was successfully used in conjunction with the research questions in the interview process, and an expert panel was formed. The expert panel was three Department of Defense Project Managers who consulted the researcher on the alignment of the study. It was determined to narrow Parker's characteristics from 12, down to the six most important. To further validate this process, a mock interview field test was conducted to assess the effectiveness of the interview questions, alignment, and the overall interview process.

Artifacts were ,also used as part of the instrumentation. Prior to interviewing the subjects, the researcher reviewed relevant artifact documents such as current DOD complex construction projects, policies publications, and project constraints. The combination of these artifact documentations allowed the researcher to gather a better understanding of the dynamic challenges the Department of Defense project managers as they navigate through complex issues of staffing, fiscal constraints, and overall unique DOD mission requirements.

The findings from the interview process and artifact document review were used to answer the research questions of the study. In conjunction, the data that was collected during this

process was compared to the literature review of the study. To validate the study's findings, the researcher used the triangulation process of analyzing the interview findings with the artifact documents as presented in Chapter IV.

Interviews

To obtain an in-depth exploration of the lived experiences of DOD project managers, the researcher used Parker's Characteristics of Effective Teams as the foundation to conduct the interview process as the primary instrumentation for the qualitative data collection. The study used a standardized semi-structured open-ended interview process to explore how the participants would best describe their lived experiences of leading DOD project teams based on Parker's Characteristics of Effective Teams (Turner, 2010).

Interview Guide Procedures

To obtain the highest quality information in the interview process, the researcher used an interview guide that consisted of open-ended semi-structured interview questions to gain a better understanding of and lived experiences of each of the participants (McMillian & Schumacher, 2010). The interview process followed a consistent line of inquiry; however, the intent was to have a stream of questions to be fluid for conversation using an unbiased manner (Rubin & Rubin, 2011). The interviews enabled the researcher to assess the project team leaders' dynamic team-building techniques in alignment with the research questions. Furthermore, the researcher used replies that allowed participants to better explain, elaborate, and follow up on to provide elicit and precise correct responses (McMillian & Schumacher, 2010).

Artifacts

Artifacts were included as part of the study to provide an added value and supplementary context for Department of Defense project team leaders and the experience, knowledge, action,

and values associated with the team-building processes for these leadership positions (McMillian & Schumacher, 2010; Patton, 2015). The artifacts included in the study were cross-referenced by the researcher and only used to give supporting evidence and context to support the research questions. For the study, the artifacts showcased how different Department of Defense installations have different missions, cultures, and pressure points of how the project teams need to be created and developed to support these achievements under various obstacles such as resource limitations, various mission requirements, scopes of work, and the impact on the local communities. These artifacts were found through publicans or various accredited news articles. Artifacts for the study were only included as part of the study if a direct relation was concluded towards the research questions. The researcher conducted extensive research towards finding artifacts, and in conjunction asked each of the participants to provide the researcher with any potential artifacts related to the study. The artifacts that were collected and utilized as part of the study were incorporated into the Nvivo software to further the coding and analysis process. Some of the artifacts included in this study were: Travis AFB Welcomes KC-46A, Camp Parks, and USACE Improves Folsom Dam. These case studies are located in Appendix L.

Researcher as the Instrument of Study

According to Davis (2021), a good research instrument has been thoroughly validated and proven to be reliable to collect data relevant to the research questions being studied. Patton (2015) stated, the researcher serves as the primary instrument of data collection in qualitative research studies. The study may contain biases because of how the researcher indirectly influenced the interview during the qualitative interview process. Researchers have cautioned that in qualitative studies, researchers as instruments may potentially influence the data

collection process due to characteristics, personality, and interview techniques by the researcher (Pezalla et al., 2012).

The researcher has extensive experience with Department of Defense project managers, team building, and team dynamics. Therefore, the researcher remained conscious of potential biases during the data collection and data analysis processes. According to McMillan and Schumacher (2010), the researcher must remain cognizant of their conduct as this may influence participants' responses. To avoid influence on the participants, the researcher refrained from including personal stories and participation during the interview process. This allowed for minimal interference and allowed the researcher to remain mindful of the integrity of the research.

This included refraining from sharing personal stories while listening to participants share theirs. Furthermore, the researcher needed to maintain close adherence to the stated methodology and field-testing protocols to minimize biases that could occur during the data collection process. Mindfulness is being intrinsically nonjudgmental and the access point to empathy (Patton, 2005). For this study, the researcher was utilized as the instrument of the study when conducting semi-structured open-ended interviews and artifact data collection.

Validity and Reliability

Validity and reliability play key roles in the authenticity of the qualitative research conducted. According to McMillan and Schumacher (2010), validity refers to "the degree of congruence between the explanations of the phenomena and the realities of the world" (p. 330).

The extensive research on team dynamics was set forth as the foundation on which the study was built around. The ensure the validity of the research, seminal authors on team models

were analyzed, synthesized, and carefully scrutinized for the various similarities and differences between the characteristics of dynamic teams as shown in the synthesis matrix (Appendix G).

To account for the validity of the study, the researcher took into account the internal reliability, pilot test, and definitions of the commonly used terminology, and allowed participants to review their answers before submitting for data collection. According to McMillian and Schumacher (2010), qualitative researchers can use up to 10 possible strategies to enhance validity. The researcher chose to use prolonged and persistent fieldwork, multimethod triangulation, participant language, verbatim accounts, low-inference descriptors, member checking, participant review, and negative or discrepant data (McMillian & Schumacher, 2010).

Reliability in a qualitative study is the consistency and repeatability of the research procedures used in a case study (Campbell et al., 2015). The reliability procedures outlined in the study by the researcher were a process of sending participants an email and verbal communication explaining the study by reviewing the interview questions, interview schedule, and protocol before conducting the interviews. Furthermore, the researcher used an interview guide that encompassed semi-structured interview questions that allowed for the increased reliability of the study. The process of field testing the interview questions with qualified researchers allowed for confirmation of a clear understanding of the research questions. According to McMillian and Schumacher (2010), the field-test instrument for data collection supports that the inquiries were both clear and yielded similar responses from participants. The researcher asked the interview questions in the same order without changes with each participant. However, the researcher allowed for probing questions to dig deeper for additional details, clarification, and examples regarding the participants' lived experiences (Campbell et al., 2015).

Field Test

The researcher used a pilot test, also commonly known as a field test to ensure that there was alignment between the research questions, and the study, and to also eliminate bias in the procedures, the interviewer, and the questions (McMillian & Schumacher, 2010). The pilot test was a method that solidified the design and arrangement of the semi-structured open-ended questions for the interview process. In addition, the pilot test allowed the researcher to assess the length of the interview and an evaluation period for the questions for intent clarity (McMillian & Schumacher, 2010). After the pilot interview was conducted, the interviewee was asked to provide feedback on the overall interview process, question clarity, and any additional questions to be added to the interview process for improvement (Appendix H). The pilot test allowed the researcher to identify any patterns of responses that required question revisions to avoid ceiling or floor effects on data collection (McMillian & Schumacher, 2010). Furthermore, the pilot field test allowed the researcher as the primary instrument to refine the interview techniques, question structure that pertained to the relevance and accuracy of the study's alignment with the research questions, and follow-up questions to allow for the participant to add clarifying comments.

Data Collection

Human Subjects Consideration

The UMass Global's Institutional Review Board (IRB) approved the study's design and interview scripts before the data collection process could commence. The intent of the IRB is to review and approve any proposed human subject research by meeting compliance with federal regulations and to ensure the researcher has considered all ethical issues (McMillian & Schumacher, 2010). In addition, before the data collection process began the researcher obtained their Collaborative Institutional Training Initiative on social behavior to further the protection of

participants' privacy (Appendix J). Once the researcher received approval from the IRB (Appendix J), the subject participants for the study received an official email asking them to participate in the study via Microsoft Teams. The email stated the participation would be an interview approximately one hour in length, and in addition documents such as an official invitation letter, a Participant's Bill of Rights, and an informed consent form to be signed by the subjects.

To further the study, the researcher scheduled interviews around the participant's schedules to allow for maximum participation and to encourage a stress-free environment. The participants needed to have a level of comfortability to freely expand on their lived experiences to obtain the highest level of rich information. The participants conducted the interviews via Microsoft Teams with audio recording and transcription. The subjects were asked the same open-ended questions, in the same order with follow-on questions, as needed to enable participants to expand on their lived experiences.

The procedures to safeguard participants' characteristics, responses, and behavior are vital by providing anonymity, confidentiality, and appropriate storage of data (McMillian & Schumacher, 2010). Each of the transcriptions and recordings was filed away on a password-protected external drive to protect confidentiality. To protect anonymity, each subject was given a pseudonym to shield their respective identities.

Interview Process

The most appropriate approach towards multi-case studies is to use open-ended semi-structured questions to allow for a high degree of objectivity and uniformity (McMillian & Schumacher, 2010). The interview process was conducted on a virtual video platform over Microsoft Teams with standard questions that were semi structured and open-ended, and allowed

for the researcher to use a probing and clarification expansion on subject responses. The researcher asked Department of Defense project team leaders a total of seven interview questions regarding Parker's Characteristics of Effective Teams Model and how they utilized these characteristics to build teams and navigate through complex construction projects. Before the interviews began, the participants each received an overview of the study, and a consent form that was signed and completed before the meeting occurred. Each of the participants agreed to the consent of the interview and the Microsoft Teams recording for the researcher to keep locked in a secure password-protected folder.

To ensure consistency in the data collection process, each interview was structured the same way for each participant. The researcher covered the overview of the interview process, the overview of the study, the informed consent, the definitions to be used in the study, the research questions used for the study, the actual interview questions, and the conclusion of the interview. Before the interview began, the researcher ensured each participant that this is a voluntary process and the interview can be terminated at any time, or questions could be skipped if they did not wish to respond. The researcher asked each of the participants the seven interview questions regarding Parker’s effective team model in relation to their lived experiences as DOD project team leaders. In conjunction, follow-up questions were asked for participants to elaborate on their lived experiences. The interviews lasted approximately 60 minutes in length and at the conclusion of each interview, the participants were thanked for their time, asked if they had any additional comments to add, and allowed them to read the transcripts for verification in which adds to the validity of the study. Once the transcripts were verified for accuracy, the researcher was able to begin the data analysis process.

Artifact Collection

Researchers use triangulation by cross-validation amongst data sources, data collection strategies, and various periods to further the qualitative data (McMillian & Schumacher, 2010). The artifact collection process was completed by participants' references to past lived experiences that directly supported their cases for leadership development processes, or by the researcher using historical knowledge of various publicized documents available for cross-referencing. Furthermore, the artifacts that were collected and used were directly related to answering the research questions. Lastly, the artifacts that were collected for the study were public documents that supported the language and words of the participants (McMillian & Schumacher, 2010).

Data Analysis

Interviews

The three identified steps to processing qualitative data are to organize and prepare the data, read and review, and code the data into themes (Creswell & Poth, 2018). Each interview that was conducted was recorded and transcribed to enable accurate data analysis. All of the participating subjects agreed to be interviewed and recorded to allow for maximum accuracy. After the participants confirmed the accuracy of their interview, the researcher grouped the provided content into codes and themes. To conduct an efficient and accelerated analysis of the data, the researcher used the software program Nvivo to begin coding. McMillan and Schumacher (2010) suggested that researchers should use the following steps to identify and refine data codes:

1. Get a sense of the whole.
2. Generate initial codes from the data

3. Compare codes for duplication
4. Try out your provisional coding
5. Continue to refine your coding system.

The researcher used these five steps of data analysis coding to identify themes. Parker's Effective Teams Characteristics provided the framework in which to organize and categorize the appropriate themes during the analysis. Furthermore, the responses provided by the participants allowed the researcher to identify the frequency of themes, and sub-themes to begin the coding process. Lastly, the data was devised into a visual representation table that outlined the most prominent theme for each question asked during the interview process, or artifacts that were presented. The researcher created a frequency table that displayed the participants with the highest frequency of comments and artifacts from highest to lowest. The tables produced the following information: the number of participants who reported a similar theme, the number of times the theme was stated in interviews, the number of artifacts that supported them, and the aggregate of interviews and artifacts for each topic.

Artifact Analysis

The artifacts that were gathered were analyzed to ensure they had a direct relation to answering and supporting the research questions and the purpose of the study. The artifacts allowed the researcher to find relevance to the research questions when they contained information about team dynamics, DOD project management, and the various requirements that support the way project managers build dynamic teams. To evaluate and process the information in the artifacts, the researcher used Nvivo to help categorize the themes and directly support the themes from the semi-structured, open-ended interview analysis.

Data Representation

The researcher reviewed the data to determine the themes best addressed each of the research questions. The frequency tables and sample participant comments were the two types of data that were presented. To demonstrate the research question visually, the researcher created a frequency table for each theme that supported all seven research questions. The tables included the number of subjects in which the provided interview comments were consistent with an identified theme, the frequency with which a particular theme was mentioned during participants' interviews, and the frequency with which subjects provided artifacts reliable with the identified theme. Finally, the researcher provided the overall number of comments and artifacts associated with each question from the subjects. Moreover, an element of the data analysis included representative comments from participants for each subject. The themes that were discovered from the research questions are presented in order of frequency of occurrence in Chapter IV.

Triangulation of Data

The use of triangulation in a study strengthens reliability and validity by using different approaches to achieve the data results (Patton, 2015). According to Creswell and Miller (2000), triangulation is the process of examining multiple perspectives, identifying common themes, and cross-validating data from various sources. Renowned researchers have stated that triangulation helps enhance the reliability and validity of the study, thus, the researcher focused on interviews and artifact collection for the study (Creswell & Poth, 2018; McMillan & Schumacher, 2010; Patton, 2010). The researcher accomplished triangulation by coding themes from the data analysis of interview transcripts and artifact analysis. Lastly, the study’s data was enhanced by outlining the purposeful sampling criteria and ensuring the sample population met the criteria, field-testing the interview questions, and a comprehensive assessment of the collected artifacts.

Identifying and Legitimizing Themes

Patton (2015), stated that qualitative analysis involves interpreting interviews, observations, and documents to find substantively meaningful patterns and themes. To identify and legitimize themes, the researcher referenced Parker's Characteristics of Effective Teams Model (2008). During the coding process, Parker's Model (2008) was referenced to identify all of the possible themes and patterns. McMillian and Schumacher (2010) warned researchers that they must navigate their own intuition and deductive examination of coded data while seeking patterns and connections between categories. To carefully examine the data analysis, the researcher used the framework of Parker's Effective Teams Characteristics to provide the lens to categorize the data during analysis. This process allowed the researcher to carefully analyze the data to identify the obvious trends within the given set of data.

Depicting and Displaying Findings

To display the identified themes for each of the interview questions that derived from the key characteristics of Parker's Characteristics of Effective Teams Model, a table was developed to visually represent the findings. The tables presented the most prominent themes from the participants in conjunction with the interview questions. Furthermore, additional visual representations of themes, sub-themes, codes, and frequencies were presented in table form for the data analysis process. The developed tables allowed the research to provide display the number of subjects who described an identified theme, how many times subjects mentioned the theme during the interview process, and how many times artifacts support each theme. Lastly, the frequency of comments and artifact documentation were identified. Each of these steps allowed the researcher to develop a narrative description of the findings.

Limitations

The qualitative research study used lived experiences of individuals with a combination of artifacts to be analyzed. The study had potential limitations due to the following:

- researcher’s geographical location in conjunction with the potential candidates to be selected
- scheduling and time constraints due to the nature of the study can limit participation
- Department of Defense project managers' self-reported lived experiences could have been influenced by outside factors such as environment, events, and various obstacles
- subjects may have withheld sensitive information
- the researcher prepared to remain impartial during the data gathering and analysis, however, unintended bias can have happened.

Summary

Chapter three covered the methodology of the multi-case qualitative research study. First, the researcher outlined the overall study objective and research questions to be investigated. The methodology in chapter three viewed and described the methods for the overall research design, population, target population, and intended sample. The researcher outlined the sample selection process, sample size, instrumentation, data collection, and data collection procedures. Each of these methods was designed to answer the research questions with consistency, integrity, and reliability. Furthermore, the objective of this chapter was designed for the researcher to gather a deeper understanding of the lived experiences of Department of Defense project managers used for team building practices to form successful teams in complex construction projects. Moving forward, the study will shift to Chapter IV which summarizes the research findings by providing detailed descriptions of the participants' lived experiences and qualitative findings.

CHAPTER IV: RESEARCH, DATA COLLECTION, AND FINDINGS

Overview

Chapter IV describes the data collection, analysis, and display of the data that addresses the research questions. This chapter restates the purpose and the research questions and provides a summary of the research design, methodology, population, and sample methods. This chapter shares the demographics of the six participants who were included in this multi-case study.

The main portion of this chapter is the presentation and analysis of the interview and artifact data collected from the six participants. Qualitative data were collected and analyzed for the team building strategies that Department of Defense (DOD) project management team leaders used as they made complex decisions leading to successful construction projects based on Parker's Characteristics of Effect Teams Model. The end of this chapter provides a summary.

Purpose Statements

The purpose of this qualitative multi-case study was to describe what challenges DOD project management team leaders experienced as they made complex decisions leading to successful construction projects. In addition, this study explored what DOD project management team leaders described as the most useful as they worked with their teams to make complex decisions leading to successful construction projects. In addition, the purpose of the study was to explore what team building strategies DOD project management team leaders used as they made complex decisions leading to successful construction projects based on Parker's Characteristics of Effective Teams Model.

Research Questions

1. What challenges do Department of Defense project management team leaders experience as they make complex decisions leading to successful construction projects?
2. What team-building strategies do Department of Defense project management team leaders use as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model?
3. What do project management team leaders describe as the most useful Parker team characteristic as they work with their teams to make complex decisions leading to successful construction projects?

Research Methods and Data Collection Procedures

A qualitative multi-case study was used to describe the team dynamics and team-building strategies that Department of Defense project managers used to lead successful construction projects and navigate complex decisions while utilizing Parker's (2008) 12 characteristics of effective team model. Six subjects participated in the study through in-depth interviews and met the sampling criteria of experienced Department of Defense project team leaders. The in-depth interviews were conducted through Microsoft Teams video communication and in conjunction, recorded with written permission from each participant. Each recording is in a password-stored file collection, only obtained by the researcher.

Population

Cresswell and Gutterman (2019) defined populations as groups that share common characteristics that differentiate them from one another. The population for this study was is DOD project managers. There is at least one project manager at every military base, and there

are 220 military bases worldwide (Congressional Research Service, 2023). Therefore, the study's population was 220 DOD project managers around the world.

Target Population

The target population for the study was established by limiting the population of this study to Department of Defense project managers in the state of California. According to Creswell and Gutterman, (2019), a target population is the actual list of sampling units from which the sample is selected. For this study, the target population identified 32 military installations; thus, the target population for this study was 32 Department of Defense project managers (Bedi et al., 2022). While looking at California only, Department of Defense project managers reduced the overall population from 220 worldwide to 32 for California. This was still too large a population for the resources available for this study. Consequently, a sample of this target population was chosen.

Sample

A sample is the group of subjects in a study from whom the researcher collects data (McMillan & Schumacher, 2010). Qualitative sample size may be determined by the resources available or the study's objectives (Patton, 2015). As stated in the target population description, 32 were too many participants for this study, therefore, a sample was needed. Thus, a purposeful sample criterion was created to obtain a sample from which the findings of the study would be generalized. To achieve this sample, first, the researcher established purposeful sampling criteria. Purposeful sampling allows the researcher to select elements from the population that will allow for the relative information to be accurately represented (McMillian & Schumacher, 2010). Furthermore, purposeful sampling aligns with the purpose statement and research questions for the study. The influence and power of qualitative purposeful sampling originated from the

emphasis on the in-depth understanding of the specific information-rich cases (Patton, 2005). The researcher used specific criteria to achieve information-rich cases for this study that are described in the sampling participant selection process section.

Sampling Participant Selection Process

To gain a sample from the target population, three sampling methods were chosen. First, the purposeful sampling criteria were created, followed by reputational sampling, and lastly, convenience sampling was used. Creswell (2014) noted that purposefully selecting participants refers to selecting individuals, or organizations who have specific characteristics.

For this study, purposeful sampling criteria were established to help identify the population of Department of Defense project managers. According to Patton (2002), purposeful sampling is a selection of subjects who can assist the researcher in gaining knowledge and understanding of a specific research topic. Furthermore, the purposeful sampling outlines allowed the researcher to select specific elements from the population that would better represent the preferred topic of interest (McMillian & Schumacher, 2010). First, the purposeful sampling criteria were developed in the following ways: the participants of this study must have met four of the six purposeful sampling criteria. The purposeful sampling criteria are summarized as the following:

- Department of Defense employees under the project manager umbrella for at least three years
- led a team of four or more individuals on a construction project.
- completed at minimum three construction projects from start to finish as a DOD project manager

- project managers who have obtained a Bachelor's degree or higher in the project management field: Project Management, Construction Management, Engineering, Architect, etc.
- project managers who have completed and held a Project Manager Professional (PMP) certification
- project managers who have successfully obtained a Professional Engineering license (P.E.)

Sample Demographic Data

The study included six subjects who met the sampling criteria and agreed to participate in the study. The demographics of the participants were shared as part of this study to include gender, ethnicity, years as a project team leader, and location of current employment. Table 1 shows the demographic information for each member of the study.

Table 1

Subject Demographics

Participant	Gender	Ethnicity	Years as DOD Team Leader	Location
1	Male	Hispanic	6	Lemoore, CA
2	Male	White	7	San Francisco, CA
3	Male	Asian	18	Fairfield, CA
4	Male	Asian	24	Fairfield, CA
5	Female	African American	5	San Diego, CA
6	Female	White	9	Sacramento, CA

The following data on subject demographics is a snapshot of the profile from the past three years of civil service.

- Participant 1: This Department of Defense Project Management Team Leader was located at Naval Air Station Lemoore. The participant was a civilian employee with the

title construction manager, overseeing five projects, and eight personnel, at an estimated $34 million of construction at the time of this study.

- Participant 2: This Department of Defense Project Management Team Leader was located at Naval Shipyard Hunters Point in San Francisco, CA, and was an O-3 in the United States Navy. The participant was a construction manager overseeing one large demolition project, with eight personnel, at an estimated $700 million of construction at the time of this study.
- Participant 3: This Department of Defense Project Management Team Leader was located at Travis Air Force Base, CA, and was the Commander of the Resident Officer in Charge of Construction and coverers the entire San Francisco Bay Area. This participant oversaw 28 projects, 32 personnel, and an estimated $234 million of construction at the time of this study.
- Participant 4: This Department of Defense Project Management Team Leader was located at Travis Air Force Base, CA, and was the Deputy Commander of the 60th Civil Engineering Squadron. The participant was a civilian employee overseeing 24 projects, and 230 personnel, at an estimated $280 million of construction at the time of this study.
- Participant 5: This Department of Defense Project Management Team Leader was located in San Diego, CA, and worked for NAVFAC Southwest as a Project Manager. The participant oversaw nine projects, and 14 personnel, at an estimated $87 million of construction at the time of this study.
- Participant 6: This Department of Defense Project Management Team Leader is located at Naval Shipyard Hunters Point in San Francisco, CA, and was a civilian employee for NAVFAC Southwest. The participant was a project manager overseeing one large

demolition project, with eight personnel, at an estimated $700 million of construction at the time of this study.

Intercoder Reliability

To increase the reliability of the data collection process, the researcher used intercoder reliability methods. Creswell and Poth (2018) claimed that having at least an 80% agreement in coding boosts the data's dependability and removes bias from the researcher. The researcher was able to achieve over 80% intercoder reliability for the data collection process and in return this was deemed acceptable qualitative data collection results.

Presentation and Analysis of Data

Department of Defense project team leaders shared their lived experiences with the researcher for the seven interview questions formulated for this study. Six of the 12 characteristics from Parker's (2008) effective teams model were used as a lens to capture the experiences and perceptions of DOD project team leaders' various dynamic team-building strategies as project managers navigate through team dynamics challenges and complex decisions to lead successful construction projects. Furthermore, the use of Parker's effective teams model was used to help guide the semi-structured, open-ended interview questions for the participants. The interviews were the primary instrument that the researcher used online through video communication on Microsoft Teams, and relevant artifacts were then examined. The interviews and artifact examination took a total of 12 hours to complete.

Data analysis for the entire study is reported in the next section with each of Parker's characteristic connected to the research question and the emergent theme of the lived experiences of the participants. Themes are listed in order, and additionally they connected to each question with comparisons to all themes which emerged from entire study.

Data Analysis for Research Question 1: What challenges do Department of Defense project management team leaders experience as they make complex decisions leading to successful construction projects?

The following section addresses the qualitative data from the six interviews with DOD Project Team Leaders and is organized into themes. The information presented came from interview Question 1. The subsections that follow provide answers to Research Question 1.

Table 2

Themes, Sources, and Frequency Counts for Research Question 1

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Listening	Active Listening Gives Everyone a Voice	6	13	2	15
Consensus Decision	Consensus Decision Cannot Always Be Guaranteed	6	15	1	16

In summary, with a total frequency of 15, all six participants explained that listening was a key challenge that DOD project management team leaders faced as they made complex decisions leading to successful construction projects. Secondly, consensus decision was identified as a second challenge with 100% of the participants, and with a total frequency of 16. The next part outlines an analysis of the qualitative data for the themes in answering the first research question using lived experiences from DOD project team leaders. The results from research question #1 are broken down by the themes in table 3.

Theme 1: Active Listening Gives Everyone a Voice.

Table 3

Listening Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Listening	Active Listening Gives Everyone a Voice	6	13	2	15

Parker's (2004) characteristic of listening resulted with a theme of active listening that gives everyone a voice, was confirmed by 100% of the participants with the fourth highest frequency of the study at 15. Throughout the semi-structured interviews, the participants claimed the importance of active listening and how this act can give each member of the team a voice. The researcher asked the participants how they encouraged the different facets of listening to give positive aid to the team. Participant 01 shared frustration with listening within teams at times. "We live in a digital world where everyone has smartphones, smartwatches, and various technology and our attention span seems to be less and less." After being asked to expand on this idea, Participation 01 stated, "during the pandemic lock-down we were forced to use Microsoft Teams to hold meetings, and I feel that most people were distracted listening and we could not accomplish what we used to do in-person meetings."

Participant 02 shared:

> Sometimes the quietest person in the room is the one we should be listening to. I often like to listen to what everyone has to say, and this is through a combination of active listening, questions, and paraphrasing to others to listen to their ideas.

Participant 05 commented similarly stating, "listening to everyone's ideas is simple when you are not thinking of what to say while they are speaking. Actively listening gives them a true voice to be heard, however, we often fail to do this."

Participant 03 continued to create the theme of active listening by claiming, “active listening is important because you allow the team member to have your full attention and to retain what they are trying to communicate, at times, I feel like we do not do well in this area.” “As a leader, I am still working on active listening to myself, but I try to question my team to get everyone to be heard”, stated Participant 06. Lastly, Participant 05 commented on the Transformational Change Leadership Project that they were a part of:

> One of our efforts in developing junior-to-senior collaboration is to help junior employees develop their voice, an area we have struggled with in the past. In return, we asked the senior staff members to actively listen to their ideas and thought processes. If we can learn to connect the older generation's experience with the youth's technology background we can be more powerful in our project processes.

Theme 2: Consensus Decision Cannot Always Be Guaranteed.

Table 4

Consensus Decision Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Consensus Decision	Consensus Decision Cannot Always Be Guaranteed	6	15	1	16

The team characteristic of consensus decision resulted in the theme of consensus decision cannot always be guaranteed. During the semi-structured interviews, this theme was commented on by all six participants and had a total frequency of 16 times. This characteristic was ranked as the least desired of all the characteristics by 100% of the participants. This characteristic looks to use the team to openly discuss everyone's ideas without any formal voting practices but allows

everyone to agree to be on the same page. The DOD Project Team Leaders were asked about their past experiences with consensus decisions on DOD project teams.

Participant 06 claimed, “consensus decision is something we would all desire to have, but it's just not a realistic option.” The other participants stayed along the same thought process by claiming within the time constraints and differences of opinion, the team cannot be granted a unified consensus on every decision that is made. Participant 02 commented:

> I would love to have our teams in 100% agreement on every single decision that is made, but that cannot always be the case. Some of the questions that need answers do not have the time to have long meetings and debates. We look to have input from our team, and sometimes we have the make judgement calls on what we feel is best for the team, the government, and the tax dollars at work.

Participant 03 stated, “a consensus decision isn’t realistic for every problem we encounter, everyone has different opinions and backgrounds.” “Ideally, we have everyone on the same page for all of our major matters at hand, because we don’t want to lose buy-in from the team”, claimed Participant 05. Furthermore, Participant 01 went on to say, “consensus decision is difficult to achieve on everything, but it’s important as a leader to explain the choices and rationale you made so they still feel important and part of the team.”

Overall, consensus decision was determined important for the team, however, very difficult to achieve every single decision. Participants claimed that time was a big factor in the reasoning of why one cannot achieve this on every team decision.

Data Analysis for Research Question 2: What team-building strategies do Department of Defense project management team leaders use as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model?

The following section addresses the qualitative data from the six interviews with DOD Project Team Leaders and is organized into themes. The information presented came from interview Question 2. The subsections that follow provide answers to Research Question 2.

Table 5

Themes, Sources, and Frequency Counts for Research Question 2

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Participation	Inclusive Participation Creates an Environment of Powerful Decision Making	6	15	3	17
Open Communication and Trust	Open Communication and Trust Builds Highly Functioning Teams	6	15	3	18

In summary, with a total frequency of 17, all six participants identified inclusive participation as a successful team-building strategy that DOD project management team leaders used. Secondly, the lived experiences identified open communication and trust with a total frequency of 18 for another team-building strategy. The next part outlines an analysis of the qualitative data for the themes in answering the first research question using lived experiences from DOD project team leaders.

Theme 3: Inclusive Participation Creates an Environment of Powerful Decision-Making.

Table 6

Participation Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Participation	Inclusive Participation Creates an Environment of Powerful Decision Making	6	15	3	18

The team characteristics participation resulted in the theme, inclusive participation creates an environment of powerful decision making. For research question number two, participants were asked about their strategies used for participation within teams to create an atmosphere of inclusion for all members to participate and discuss their thoughts on the importance of this characteristic within a team. Participation was mentioned by all six subjects and included a frequency of 17 occasions. The theme throughout the interview process was that inclusive participation creates an environment of powerful decision-making.

Participant 01 went on to say:

> During the construction process, many decisions have to be made to enable the project to move forward when we encounter design flaws, unforeseen circumstances, or any type of issue that will stop us from moving forward. We are more powerful with the more ideas we can gather to discuss which is the best path forward. In these scenarios, I like to set up a meeting with my team and hear from everyone their ideas and thoughts, and this has been the best path to success in my opinion.

DOD Construction teams were often comprised of a combination of blue-collar and white-collar individuals. This can be a challenge for a leader to navigate as communication and participation might greatly vary depending on the individual's background or personality, claimed Participant 02. Participant 03 went on to comment, "our construction teams sometimes have people with

unique backgrounds and perspectives. We need everyone's ideas and to learn from one another to help the leadership team make the appropriate decisions."

DOD Project Managers across the board showed vulnerability by claiming they needed the help of their team to make important decisions throughout the interview process. Participant 04 stated, "the day I decide that I always know what is best, is the day I know I don't know what's best. I need our team members to lean in, participate, and provide excellence so we can accomplish our mission."

The teams have distinct roles and assignments, for example, if an entire building is being constructed you would have individuals with backgrounds in concrete, electrical, mechanical equipment, etc. Therefore, it is crucial that each member participates and completes their area of responsibility. According to Participant 05:

> We need maximum participation from everyone, we all play a role in these projects. We conduct weekly meetings to get input from one another, and if I feel that I am not getting the appropriate level of participation from a team member I will pull them to the side privately and address my concern and remind them of their importance to the team.

In summary, the DOD project managers lean on everyone within a construction team to play a particular role by participating, generating ideas, and working together as a team. These leaders chose to hold a meeting together with participation from the team and will seek out individuals on a one-on-one basis to remind them of the importance of participation to the team.

Theme 4: Open Communication Led to Trusting Relationships.

Table 7

Open Communication and Trust Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Open Communication and Trust	Open Communication Led to Trusting Relationships	6	15	3	18

The team characteristic open communication and trust, resulted in the theme open communication led to trusting relationships. The second theme from the semi-structured interviews was open communication led to trusting relationships. Open communication and trust were stated a total of 18 times between the six participants. The researcher asked each of the participants how they have enabled team members to freely express their opinions on the team's operations and how they have fostered an environment for open communication. Furthermore, the participants were also asked what recommendations they could give to other DOD project managers. All the DOD project team leaders expressed a high desire for teams to have open communication and trust for the team to be deemed highly functioning. The term *communication* in this theme refers to the team's ability to openly and freely discuss topics about the team's goals, strategies, and overall, how to be successful. This process of open communication created a trusting atmosphere and allowed teams to break through project hurdles and achieve set milestones. Several of the project team leaders mentioned the use of a partnering session before each project kicked off to cover the terms of the team's procedures, open communication, and to help build trust. In addition, it was noted that the team was encouraged to openly communicate with one another to further the project, build bonds, and achieve goals. However, they were also instructed to follow up with written documentation to track the changes within the project to ensure everyone on the team is on the same page.

Participant 04 made comments directly about a well-known policy for leaders called the open-door policy. Participant 04 stated:

> I don't like to use the term open door policy when it comes to communicating with members of our team because there is a process, we follow that should be adhered to. Of course, I will open my door and listen to members of our team when they need it. However, we create communication levels during our partnering meetings, and certain items can be discussed and handled at the lower levels. We as project managers handle the higher-level milestones and difficult decisions and we entrust our team to be able to handle the smaller items without getting us involved.

These Department of Defense project team leaders had a variety of backgrounds from military, civilian, and some were prior military and now civilian. Some of their communication policies of communication levels were stricter than others. Participant 03 shared:

> How can I build trust in my team if we are not freely communicating with one another? When we are in an informal setting working as teammates, I don't want them to call me by my rank, call me by my name.

Building trust within a team that has not worked together in the past can be a difficult task to achieve in a short amount of time. Participant 05 went on to give recommendations to other DOD Project Managers:

> Some projects you have a short time to gather, develop, and build trust within your team. Something as simple as having a team meeting at a Starbucks or bringing in bagels to talk and discuss the team goals, procedures, or any other topics and giving the team to talk about their personal and professional experiences builds trust.

Along the same thought process, Participant 01 suggested, “bring a struggling team out for lunch, bowling, or to have a coffee together. Building these relationships and bonds will allow for the team to communicate better and trust will naturally be formed.” The common theme amongst all six project managers was to start by bringing the team together and forging relationships. Through these relationships of open communication, the members of the team will begin to trust one another, and this is what will help the teams prevail through any trials or tribulations along the way.

Data Analysis for Research Question 3 What do project management team leaders describe as the most useful Parker team characteristic as they work with their teams to make complex decisions leading to successful construction projects?

The following section addresses the qualitative data from the six interviews with DOD Project Team Leaders and is organized into themes. The information presented came from interview Question 3. The subsections that follow provide answers to Research Question 3.

Table 8

Themes, Sources, and Frequency Counts for Research Question 3

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Clear Purpose	Clear Purpose is Needed to Begin	6	18	3	21
Clear Roles and Work Assignments	Open Communication and Trust Builds Highly Functioning Teams	6	18	2	20

In summary, with a total frequency of 21, all six participants identified clear purpose as the most useful team characteristic when they worked with their teams to make complex decisions leading to successful construction projects. Subsequently, with a total frequency of 20,

clear roles and work assignments were identified as the second most useful characteristic. The next part outlines an analysis of the qualitative data for the themes in answering the third research question using lived experiences from DOD project team leaders.

Theme 5: Clear Purpose is Needed to Begin.

Table 9

Clear Purpose Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Clear Purpose	Clear Purpose is Needed to Begin	6	18	3	21

The team characteristic clear purpose resulted in the theme clear purpose is needed to begin. During semi-structured interviews, participants were asked to describe the six characteristics from Parker's (2004) effective teams model. All six leaders chose clear purpose as the most essential characteristic for a Department of Defense construction team to have to achieve success. The data revealed that the participants expressed that a clear purpose is needed to begin. This concept was repeated in the data a total of 21 times, highlighting the importance of this theme. The following response was from Participant 02:

> How can we begin a project if we do not know its purpose? How can we form a team if we do not know the intended purpose of this team? The mission cannot begin and cannot be complete without a set purpose. We cannot let our tax dollars go to waste without a clear purpose for using our manpower and resources.

In another example, Participant 05 went on to explain:

> The construction teams in the DoD are not set up to make a profit designing, developing, and executing construction projects like a private contractor would. We work for the

> government and our goal is to save money, therefore, we need to have a clear purpose to form teams to execute our mission.

The participants in the study continuously emphasized the importance of a clear purpose being the stepping stone for the development of the team. Participants continued to advocate for the importance of a clear purpose to begin any stage of construction. Participant 01 went on to use a construction analogy for the importance of clear purpose:

> How can I build something if I don't know the intended purpose of this building? Is this an airplane hangar, is it simple office spaces, is it ammunition storage? All of these details drastically change our strategy, and we need a clear purpose to begin our planning processes.

At the time of this study, Participant 06 oversaw an estimated $700 million project to demolish over 120 buildings in former Naval Shipyard Hunter's Point, California. Participant 06 stated:

> A clear purpose is very vital for the leaders to digest and understand the parameters of the team development. For instance, we need to know the intent of the project, what the purpose will be used, the SMEs (subject matter experts) to be used, and the budget and timeline. Each of these elements is the clear purpose for the team to form upon.

The researcher discovered an article from Travis Air Force Base to further validate the claims made by the participants about the importance of a clear purpose. Travis Air Force Base welcomes a new aircraft platform called the KC-46A Pegasus, a tanker aircraft that provides survivability, connectivity, and situational awareness that allows the crew to detect, identify, avoid, and defeat threats in contested environments (Minoda, 2023). The construction team at Travis built a massive 174,300 square feet three-bay hangar with office spaces at approximately $136.2 million and required five years and several experts in the field to complete it (Minoda,

2023). This is another example of the clear intended purpose for the team to form, who to identify as the subject matter experts, and the size of the team to form.

Theme 6: Clear Roles & Work Assignments Enables the Team to Form.

Table 10

Clear Roles and Work Assignments Themes, Sources, and Frequency

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Clear Roles and Work Assignments	Clear Roles & Work Assignments Enables the Team to Form	6	18	2	20

The team characteristic clear roles and work assignments, resulted in the theme, clear roles & work assignments enables the team to form. The data collection resulted in clear roles and work assignments as the second highest frequency. The participants supported this finding as the second most important characteristic within a team to be successful in executing construction projects. This theme occurred on 20 different occasions between the six participants. During the interview process, most of the participants identified clear purpose as step number one, and clear roles and work assignments as step number two when developing DOD construction teams. Participant 03 stated:

> Ideally, we would like to form a diverse team where each member is cross-trained. This cannot always be the case, but everyone on the team must know their distinct roles and assignments so we can all play our part. As the project progresses, we can help one another out in certain areas, but everyone needs to know their assigned roles and areas of responsibility.

The participants in the interview process said that teams are comprised of individuals, but each individual made up a team by doing their part. Participant 05 remarked, “the DOD has set up specific guidelines for our teams to follow, there is a process to all of this madness”, stressing the importance of clear role assignments. Participant 02 provided a football team analogy to DOD construction teams. Participant 02 stated, “imagine a football team takes the field and no one has a clue who is supposed to snap the ball, no one knows who the quarterback is, no one knows what routes to run, it would be a disaster.” Participant 06 went on to remark:

> I would go as far as to say that clear roles and work assignments are the foundational blueprints of what our team is trying to achieve. Without these clear roles and work assignments, we might have people building the roof before the foundation is complete.

Participant 01 saw the importance of these characteristics, “for the team to be successful, team members need to understand what their assignments are, the different responsibilities they may have, and the boundaries they are set to work within.”

Additionally, Participant 05 discussed the importance of establishing clear roles and work assignments:

> The way our organization is set up, it is very important to establish roles and responsibilities within the team. We want to be as diligent as possible to make sure we are completing this task on time and within budget. We cannot afford to have multiple members working with the same areas and skipping others. This is why projects with the highest success rates establish these team norms during the partnering and pre-construction meetings.

In certain projects, multiple people with the same background can be assigned to a DOD construction project. “We need to have the right individuals with the proper experience in each

role to complete these projects on time", Participant 01 explained. Communication timing is very important, and we must ensure that each person knows what their function and participants claimed during the interviews. In the end, the participants tied clear purpose and clear roles and work assignments as the first two steps in designing a construction team to be successful.

Summary

This chapter presented an in-depth examination of the purpose statement, research questions, methodology, data collection process, population, and sample used in the study. The data from the six DOD project team leaders as well as supporting evidence from the artifact reviews, created a detailed presentation and analysis of the findings. This study explored the lived experiences of DOD project managers and the team-building strategies that would be recommended based on Parker's (2008) effective teams model. The details of these lived experiences revealed seven different themes that were discovered from the research. Tables 11-13 summarize the themes and frequencies for each research question.

Table 11

Themes, Sources, and Frequency Counts for Research Question 1

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Listening	Active Listening Gives Everyone a Voice	6	13	2	15
Consensus Decision	Consensus Decision Cannot Always Be Guaranteed	6	15	1	16

Table 12

Themes, Sources, and Frequency Counts for Research Question 2

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Participation	Inclusive Participation Creates an Environment of Powerful Decision Making	6	15	3	17
Open Communication and Trust	Open Communication and Trust Builds Highly Functioning Teams	6	15	3	18

Table 13

Themes, Sources, and Frequency Counts for Research Question 3

Team Characteristic	Theme	Participants	Frequency		Total
			Interviews	Artifacts	
Characteristic	Clear Purpose is Needed to Begin	6	18	3	21
Clear Roes and Work Assignments	Clear Roles & Work Assignments Enables the Team to Form	6	18	2	20

The study's final summary is presented in Chapter V, which includes results, findings, and conclusions. Implications for action, research, recommendations, conclusions, and closing remarks will close out this chapter.

CHAPTER V: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The final chapter is comprised of the findings, conclusions, and recommendations for this research study. The major findings and unexpected findings are reported and followed by the conclusions drawn from the findings. Following, the implications for actions are presented, which outlines the most useful Parker (2008) team characteristic that Department of Defense project managers described as the most useful as they worked with their teams to make complex decisions leading to successful construction projects. Also, this chapter describes the team-building strategies that Department of Defense project management team leaders used as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model (2008). Lastly, the chapter presents recommendations for future research that may add a depth of knowledge regarding the team-building strategies for DOD project teams. The chapter concludes with the researcher's reflections and final remarks.

Methodology Review

The lived experiences of theDepartment of Defense project team leaders with their relationship to challenges, building team dynamics, and team-building strategies that Department of Defense project managers used to lead successful construction projects and navigate complex decisions while utilizing Parker's (2008) 12 characteristics of effective team model. The methodology was designed to answer the following research questions:

1. What challenges do Department of Defense project management team leaders experience as they make complex decisions leading to successful construction projects?
2. What team-building strategies do Department of Defense project management team leaders use as they make complex decisions leading successful construction projects based on Parker's Characteristics of Effective Teams Model?

3. What do project management team leaders describe as the most useful Parker team characteristic as they work with their teams to make complex decisions leading to successful construction projects?

A qualitative multiple case study was used to describe the lived experiences that Department of Defense project management team leaders described as the most useful team characteristics as they make complex decisions leading to successful construction projects based on Parker's (2008) Effective Teams Model. Additionally, the case study was designed to answer the team-building strategies DOD project management team leaders used as they made complex decisions leading successful construction projects based on Parker's (2008) Characteristics of Effective Teams Model. The researcher collected artifacts as they were suitable for the study and conducted in-depth semi-structured interviews with six Department of Defense project management team leaders. The interviews were conducted through Microsoft Teams, and thereafter the data was stored securely by the researcher.

The study's population was first established at 220 project team leaders across the globe. To gain a rich sample of the potential subjects, the researcher looked at the population of California DOD project team leaders at 32. This was still too large a population for the resources available for this study. Consequently, a sample of this target population was chosen to fit the needs of the study based on the resources available. Thus, a purposeful sample criterion was created to obtain a sample from which the findings of the study would be generalized. To achieve this sample, first, the researcher established purposeful sampling criteria. The researcher used specific criteria to achieve information-rich cases for this study.

The researcher used three sampling methods to gain a sample from the target population. First, the purposeful sampling criteria were created, followed by reputational sampling, and

lastly, convenience sampling was used. For this study, purposeful sampling criteria were established to help identify the population of Department of Defense project managers. First, the purposeful sampling criteria were developed. The participants of this study must have met four of the six purposeful sampling criteria. The purposeful sampling criteria are summarized as the following: (a) Department of Defense employees under the project manager umbrella for at least three years, (b) led a team of four or more individuals on a construction project, (c) completed at minimum three construction projects from start to finish as a DOD project manager, (d) project managers who have obtained a Bachelor's degree or greater in the project management field, € project managers who have completed and held a Project Manager Professional (PMP) certification, and (d) project managers who have successfully obtained a Professional Engineering license (P.E.).

Lastly, to ensure that Parker's Characteristics of Effective Teams model was identified and discussed, the researcher developed seven semi-structured, open-ended interview questions to inform and address the study's three researcher questions. The researcher ensured that Parker's model was successfully used in conjunction with the research questions in the interview process, and an expert panel was formed. The expert panel consisted of three Department of Defense Project Managers who consulted the researcher on the alignment of the study. It was determined to narrow Parker's characteristics from 12, down to the six most important. To further validate this process, a mock interview field test was conducted to assess the effectiveness of the interview questions, alignment, and the overall interview process.

Major Findings

Key Finding 1: Project Management Team Leaders Need to Establish a Clear Purpose to Give Teams a Foundation to Form the Team

A key finding of this study was that establishing a clear purpose was the first characteristic that needed to be established for DOD project management teams to be successful. All six of the Department of Defense Project Management Team leaders identified that clear purpose was the most important characteristic from Parker's (2008) Characteristics of Effective Team Model. This characteristic totaled a frequency of 21 and informed the first Theme of the study. Each participant mentioned the importance of a clear purpose to begin the formation of the team, and the ultimate foundation on which to form. The DOD leaders expressed the need for a clear purpose to start the process of forming and leading teams.

Teams must have a clearly defined purpose to be able to understand the team's objective and mission needs. According to Harvey and Drolet (2004), leaders often fail to form effective cohesive teams when they lack a clear purpose. DOD Project Teams are formed with the brightest and hardest working minds together on a team, yet without a clear purpose or objective, they will find great difficulty completing the important task at hand. Katzenbach and Smith (1999) stated that a team should be organized with a clear purpose and a common understanding of how performance will be evaluated. Based on this finding, it is concluded that without establishing a clear purpose first, DOD project management teams will not be successful.

Key Finding 2: Setting Clear Roles & Work Assignments Give the Team Direction and Clarity

A key finding of this study was, that after establishing a clear purpose that early on setting clear roles and work assignments was required for DOD project management teams to be successful. In the semi-structured interviews, clear roles and work assignments were the second

highest frequency at 20, with input from all six subjects. The researcher noted that participants ranked this characteristic from Parker's (2008) team model as the second most important, often linking these team characteristics to a clear purpose as a logical second step.

Larson and LaFasto (1989) asserted that teams should seek to establish clear roles and responsibilities, an efficient communication system, an individual evaluation tool, constructive criticism, and the utilization of fact-based judgment. Furthermore, Parker (2008) suggested that role clarification is especially important when (a) a new team forms, (b) a new member joins the team, or (c) there is conflict in data collection and role assignments (Parker, 2008). Lastly, Participant 01 explained the high value of clear roles, "we need to have the right individuals with the proper experience in each role to complete these projects on time."

Based on these findings, it is concluded that early on in the team cycle, after a clear purpose was established, clear roles and work assignments were required for DOD, project management teams to be successful.

Key Finding 3: Team Leaders That Use Inclusive Participation Fosters an Intelligent Approach Towards Decision-Making

A key finding of this study was that after establishing a clear purpose and setting clear roles and work assignments, DOD project management team leaders needed to establish inclusive participation to be successful. The data provided in the semi-structured interviews suggested that leaders who used strategies to include inclusive participation enabled an intelligent approach toward decision-making. Participation was mentioned by all six subjects and included a frequency of 17 occasions. The theme throughout the interview process was that inclusive participation created an environment of powerful decision-making.

Parker (2008) noted the positive importance of teams that created an overall atmosphere of inclusion for all members to participate and discuss. Establishing norms of inclusive participation has demonstrated to enable DOD Project Management leaders the best ability to make smart decisions on projects. Participant 03 went on to comment, "our construction teams sometimes have people with unique backgrounds and perspectives. We need everyone's ideas and to learn from one another to help the leadership team make the appropriate decisions." The Department of Defense leaders continued to describe the importance of the participation and input of the teams to enable the team leader to make the best decisions possible.

Based on this finding, it was concluded that early in the team cycle, after a clear purpose and clear roles and work assignments were established, project management leaders needed to establish an inclusive participation climate that led to intelligent decision-making.

Key Finding 4: Promoting Team Norms Such as Active Listening and Gives Everyone A Voice in the Decision-Making Process

A key finding of this study was that to establish an inclusive participation climate that led to intelligent decision-making, team leaders set and established team norms such as active listening; thus, everyone felt that they had a voice in the decision-making process. As evidenced in Theme 4, all six participants felt that establishing team norms such as active listening gave everyone a voice in the decision-making process. Throughout the semi-structured interviews, the participants claimed the importance of active listening and how this act can give each member of the team a voice. Participant 02 shared:

> Sometimes the quietest person in the room is the one we should be listening to. I often like to listen to what everyone has to say, and this is through a combination of active listening, questions, and paraphrasing to others to listen to their ideas.

Participant 05 commented similarly stating, “listening to everyone’s ideas is simple when you are not thinking of what to say while they are speaking. Actively listening gives them a true voice to be heard.”

Building relationships at the beginning of a project is an important developmental period for the team to start to share bonds. Katzenbach and Smith (1999) discovered that to enhance team dynamics, the team should not only spend scheduled time together in meetings but also have unscheduled time such as off-site visits or extra time before and after official meetings.

Parker (2008) emphasized teams that use active listening can maximize their contributions toward the team's efforts. This method continually occurred during the semi-structured interviews with the emphasis on the importance of everyone on the team contributing. Based on this finding, it is concluded that to establish intelligent decision-making team leaders, substantial efforts need to be made to set and maintain active listening norms.

Key Finding 5: Leaders that Establish Open Communication and Trust Build Highly Functioning Teams

A key finding of this study was that when leaders created an environment of open communication, that trust was built leading to a highly functioning team. Department of Defense Project Management Team Leaders attributed building highly functioning teams by establishing trust and open communication within the team structure. Several of these leaders discussed the difficulty of building trust and communication norms within a team in a short timeframe, with a diverse background and project demands.

Trust has been identified as the most important stage of team development, and teams with an atmosphere of open communication, constructive growth, respect, and attitude have been the most successful (Hackman, 1990; Lencioni, 2002, Parker, 2004).

Based on this finding, it is concluded that in addition to the other characteristics of Parker's model that were key findings, team leaders who created open communication of ideas created trust which contributed to highly functioning teams.

Unexpected Findings

Unexpected Finding 1: Consensus Decision is Not a Team Norm that DOD Project Management Team Leaders Seek

A key finding of this study was that when leaders sought to establish consensus decisions that this characteristic did not contribute to high effective DOD teams. Participants during the semi-structured interviews unanimously voted consensus decision as the least important characteristic of the six. In most instances, leaders would prefer to have a consensus decision to keep the team spirit, trust, and communication high. However, DOD Project Management Team Leaders continuously pointed out that time is a major factor in project success. Therefore, time is not always guaranteed to gain a consensus decision from the group. Participant 06 commented, "consensus decision is something we would all desire to have, but it's just not a realistic option." On the same thought process, Participant 03 stated, "a consensus decision isn't realistic for every problem we encounter, everyone has different opinions and backgrounds."

Consensus decision according to Parker (2008) is the centerpiece for effective teams. Although the subjects described in the interviews their desire to achieve consensus decision, they were aware that in many cases they have to make the choice they feel is best for the team, the project, and the mission at hand. Based on this finding, it was concluded that in spending time to achieve consensus may not lead to high effective DOD project teams.

Conclusions

The key findings from the semi-structured interview process resulted in five conclusions based on the lived experiences of Department of Defense Project Management Team Leaders. The following five conclusions have supporting evidence drawn from the qualitative data, as well as the literature.

Conclusion 1: Without Establishing a Clear Purpose First, DOD Project Management Teams Will Not Be Successful.

The findings of this study through the lived experiences of DOD Project Management Team Leaders concluded that a clear purpose must first be established before forming a team. Each of the subjects concluded that they must know the purpose of the project, the budget, the timeline, and the scope of work to understand what type of team to form.

Research has backed up the conclusion of establishing a clear purpose. Larson and LaFasto (1989) established that a clear purpose was an indicator of effectively functioning teams and returned positive results. Lencioni (2002) contributed that teams that display commitment also have a clear purpose around the team's direction and priorities, opportunities are accepted, and team structure is built around shared objectives. Harvey and Drolet (2006) also discussed that effective teams have an organizational vision that directs the direction of a team towards a clear purpose.

According to Participant 01: “we must know the purpose and intent for the team to form to first understand how we wish to lead and guide the team.” Participant 06 also discussed the importance of a clear purpose, “we are trained as military and civilian to follow protocols and procedures. Every project has protocols and procedures, but first we need to know the clear purpose of the project.”

Conclusion 2: Setting Clear Roles & Work Assignments After Establishing a Clear Purpose Were Required for DOD Project Management Teams to Be Successful

Based on the findings of this study and supported by research, for Department of Defense Project Management Teams to be effective, clear roles and work assignments must be established. The DOD team leaders expressed the importance of establishing roles and responsibilities during the partnering and pre-construction meetings before projects begin. This process eliminates confusion, sets the boundaries for individuals, and allows the team to begin the project lifecycle. According to Harvey and Drolet (2006), teams should be aware of the skillset of each member and include balanced roles and opportunities for team members to strive and showcase their abilities. Additionally, Parker (2008) discussed the importance of clear expectations, assignments, and roles are accepted and carried out by everyone on the team.

Participant 01 commented on the importance of clear roles and work assignments, "for the team to be successful, team members need to understand what their assignments are, the different responsibilities they may have, and the boundaries they are set to work within." The participants during semi-structured interview questions relied on their team members to accept and carry out their roles and for everyone to play an important role in the construction project. Without clear roles and assignments, the project may struggle to stay on time and within budget.

Conclusion 3: Establishing an Inclusive Participation Climate Leads to Intelligent Decision Making After Establishing a Clear Purpose and Clear Roles and Work Assignments

The findings of the research concluded that for Project Managers to be most effective in their decision-making processes, they must require valuable input from everyone on the team. Parker (2008) discussed the positive importance of teams that create an atmosphere of inclusion for all members to participate. Along the same thought process, Participant 03 went on to

comment, “our construction teams sometimes have people with unique backgrounds and perspectives. We need everyone’s ideas and to learn from one another to help the leadership team make the appropriate decisions.”

Department of Defense project teams are often comprised of diverse staff. Some members of the team may dominate the discussions more than others, however, the participants discussed inclusive participation. Department of Defense Project Management Team Leaders need to create an atmosphere of inclusive participation to get the maximum amount of information from their team to conclude the correct decisions to make.

Conclusion 4: To Establish Intelligent Decision-Making Team Leaders, a Substantial Effort Needs To Be Made to Set and Maintain Active Listening Norms

Based on the review of the literature and the research findings, for DOD Project Teams to be highly effective, they must establish team norms such as active listening. Parker (2008) emphasized teams that use active listening can maximize their contributions toward the team's efforts. In this study, leaders emphasized their frustration with distracted listening through various outlets such as smartphones, smart watches, and virtual meetings. Participant 03 discussed the importance of active listening, “active listening is important because you allow the team member to have your full attention and to retain what they are trying to communicate.” Team norms have long been a foundational piece in team models. For example, Larson and Larfasto (1999) discussed that team norms are used as a guide through team conflict and adverse situations and become part of the team’s core structure. Team norms served as two functions, first to provide a guide for self-monitoring by team members and to provide a basis for the team leader to give feedback to another member who has violated the norm (Parker, 2008). Lastly, norms should be reiterated to the team indefinitely in team meeting agendas and revisited

regularly as a working document to align with team objectives and obligations (DeFour and DeFour, 2012).

Department of Defense Project Management Team Leaders should establish team norms such as active listening during the partnering session. These team norms should be written down and regularly revisited to ensure they are continuously established for all team members to follow.

Conclusion 5: Team Leaders Who Created Open Communication of Ideas, Created Trust, Which Contributed to Highly Functioning Teams

The findings of the research study concluded the project team leaders must prioritize open communication and trust at the beginning of the team. Harvey and Drolet (2006) discussed the importance of this step by avoiding continuous perceptual conflicts by creating an atmosphere of open communication and trust. Trust and transparency have been identified as the most important stage of team development and notably has been most successful within teams when members had an atmosphere of open communication and constructive growth, respect, and attitude (Hackman, 1990; Lencioni, 2002, Parker, 2004).

All six participants from the study believed that developing open communication and trust within a team is vital to the team's success. Furthermore, these leaders sought to establish these principles by having open discussion dialogue before and after meetings, or even looking to have a group outing to get to know one another. Participant 01 suggested, "bring a struggling team out for lunch, bowling, or to have a coffee together. Building these relationships and bonds will allow for the team to communicate better and trust will naturally be formed." The evidence from this study supports DOD Project Management Team Leaders to establish an environment that invites open communication and builds trust within the team.

Implications for Action

Implication for Action 1: DOD Project Management Team Leaders Partner with the Contracting Team, Design Management Team, and The End User to Establish a Clear Purpose

Findings from this study indicated that a clear purpose must first be established before the project management team can form and design their team. The team needs to understand the purpose and intent of the project, the budget, and the timeline to establish how the team should form. For instance, if the team is building an airplane hangar, and the completion of the project is hinged on a new unit moving to the base installation, the project cannot exceed the timeline. In other instances, the project team may be under strict budget guidelines, and the project team will require the experts in determined scope of work to ensure no mistakes are made. These key indicators of a clear purpose can be established with the contracting team, design management team, the user, and the project management team before the scope of work is finalized.

Team models have outlined a key characteristic in teams is to have a clear purpose and understand the team's objectives (Harvey & Drolet, 2004; Larson & LaFasto, 1989; Parker, 2008). It has been noted that team leaders who do not establish a clear purpose, often fail to form effective cohesive teams (Harvey & Droley, 2004). Katzenbach and Smith (1999) stated that a team should be organized with a clear purpose and a common understanding of how performance will be evaluated. The clear purpose stated and outlined by leaders and managers is the team's roadmap to success.

Implication for Action 2: It is Recommended that DOD Project Management Team Leaders Obtain Professional Development Resources to Aid in Setting Clear Roles & Work Assignments

It is recommended that DOD Project Management Team Leaders obtain professional development resources to aid the project team leader in several aspects of the team development role. More specifically, DOD project management team leaders need aid at setting clear roles and work assignments to develop highly effective teams. The findings of the study showcased that this was highly impactful to the development of the team, and the overall success of the projects. However, in some instances, DOD project management team leaders failed to do this. Therefore, professional development resources such as a training class should be part of the core project management team development process. The training requirement will be 40 hours for the first year, and 15 hours each of the following years as a refresher. Furthermore, the training development process will be one of the hallmark recruiting processes for obtaining young engineering students to apply for DOD project management positions. These trainings will be in-person facilitation and web-based, focused on developing young leaders into experienced DOD project managers.

To build a highly effective team, DOD team leaders must assign roles and responsibilities to each member of the team, and have the team agree upon those roles. In some instances, there may be several individuals with similar backgrounds and experiences assigned to a project. Parker (2008) suggested that role clarification is essential when forming new teams, when a new member joins the team, or when there is a conflict in role assignments. Therefore, establishing these clearly defined roles and responsibilities will eliminate confusion, loss of production, or conflict within a team.

Clear roles and work assignments should be discussed, agreed upon, and written down for all team members to understand who to properly communicate and discuss project matters with. Without clearly defined roles and assignments, the team's chances of highly performing are not acceptable.

Implication for Action 3: Bring in an Outside Resource to Facilitate Inclusive Participation Through Partnering Meetings

The third conclusion developed the recommendation for Department of Defense Project Management team leaders to encourage inclusive participation so they can make the best possible decisions. According to Parker (2008), team members who stay actively engaged are more likely to have valuable input to the group. In return, the project manager can use the valuable information from the group to make the final decision on project direction. In certain instances, decisions must be made on specialty construction categories, such as fire protection. The project team leader will need input from the Fire Protection Engineer to move forward. In other instances, issues arise during the construction process.

To build an atmosphere of inclusive participation, a partnering meeting must be established and facilitated by an outside resource. This will allow all members of the group to participate, and thereafter, the facilitator will give the DOD project management team leaders resources on how to continue inclusive participation. Partnering meetings will be revisited once a quarter with the facilitator and the project team, and even more if inclusive participation is not being met.

Implication for Action 4: It is Recommended that DOD Project Management Team Leaders Establish Team Norms Such as Active Listening During the Partnering Meetings

Partnering meetings were suggested as a key focus to enable DOD project management team leaders with inclusive participation in Implication for Action 3. Subsequently, a secondary part of the partnering meetings will be to establish team norms for everyone within the team structure. The facilitator will help the project team leader establish the overall team norms, and this will be regularly visited during each month, and led by the project team leader. The findings from the interviews highlighted that project team leaders who establish team norms such as active listening can build a strong cohesive team. Team norms are the rule of law within a team to conduct professionally. To maximize effectiveness, Parker (2008) recommended establishing these team norms of characteristics such as listening which includes withholding judgment until all the data and facts are present. Lastly, Parker (2008) emphasized teams that can use active listening can maximize their contributions toward the team's efforts.

Implication for Action 5: It is Recommended to Create Open Communication and Trust Team Norms at the Partnering Meeting

Partnering meeting training and facilitation continue to play a key role in the implication for action. Project team leaders must add open communication and trust into the team norms at the partnering meeting and regularly emphasize this effort throughout the project, as outlined in their training modules. Creating open communication can be part of the team norms, however, open communication also includes an atmosphere of freely expressing their opinions on the team's tasks, as well as the group's operations (Parker, 2008). An atmosphere of open communication can foster growth, respect, and attitude within the team (Hackman, 1990; Lencioni, 2002, Parker, 2004). Lastly, building trust within a team can be conducted through

official team functions, or off-site visits to communicate, create bonds, and ultimately build trust to become a highly effective team.

Recommendations and Further Research

This study contributed findings and conclusions to the literature on how Department of Defense Project Management Team Leaders lead and develop their teams through complex issues using Parker's (2008) Characteristics of Effective Teams Model. This study focused on the lived experiences of DOD Project Management Team Leaders in California and has the potential to inspire future researchers to dive into the deeper complexities of this study in other regions. Based on the findings of the study, the following areas of future research are suggested:

Recommendation 1: Replicate The Study to Include Different Regions of the Country

A future qualitative multi-case research study in other regions of the United States Government would be useful to understand the various practices that are used for the success or failure of DOD Project Managers. Furthermore, a study can be narrowed down to location, or a specific Department of Defense such as the Army Corps of Engineers.

Recommendation 2: Narrow the Study to Civilian Only DOD Project Team Management Leaders

A future qualitative multi-case research study could narrow down the key findings, conclusions, and implications for actions based on the training provided by civilian members only. The findings of this study would enable the civilian leadership to pinpoint the shortfalls and key areas that need improving.

Recommendation 3: Narrow the Study to Military Only DOD Project Team Management Leaders

A future qualitative multi-case research study could narrow down the key findings, conclusions, and implications for actions based on the training provided by military members only. The military spends many resources on leadership training, however, the findings of this study would enable the military leadership to pinpoint the shortfalls and key areas that need improving in project management.

Recommendation 4: Delphi Study to Utilize Team Building Strategies

A Delphi study could be conducted using Department of Defense Project Management Team Leaders as the strategies they use to develop their teams to successfully execute projects on time and within budget.

Concluding Remarks and Reflections

As the study concludes, I reflect on the journey that took place during the entire research process. First, it was important to find a relevant topic within my career field that has yet to be studied, Department of Defense project management team leaders. The time and investment spent towards this research study was rewarding as my development as a leader has improved through a full understanding of the research process with the development of critical thinking, analysis, organization, and writing skills greatly enhanced throughout the process.

The balance between a professional career, a research study, and a growing family proved to be a skill to learn on its own. This process has led me to a higher level of understanding of what it will take to become a better leader, more specifically in the field of DOD project management. I have learned a lot about leadership through the interview process

and research collection. With that, we must strive for greatness by using the foundational building blocks set forth and continue to develop the most important asset, people.

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