AN EXPLORATORY INVESTIGATION INTO THE FACTORS OF LEADERSHIP, ORGANIZATIONAL CULTURE, AND GEOGRAPHY RELATED TO PROJECT MANAGEMENT STRATEGY AND PERFORMANCE IN THE STATE OF ALASKA

by

Edward L. Goans

Dissertation

Submitted to the faculty of

Trevecca Nazarene University

School of Graduate and Continuing Studies

In Partial Fulfillment of the Requirements for

the Degree of

Doctor of Education

in

Leadership and Professional Practice

October 2019

AN EXPLORATORY INVESTIGATION INTO THE FACTORS OF LEADERSHIP, ORGANIZATIONAL CULTURE, AND GEOGRAPHY RELATED TO PROJECT MANAGEMENT STRATEGY AND PERFORMANCE IN THE STATE OF ALASKA

by

Edward L. Goans

Dissertation

Edward L. Goans Signature of Student	10/19/19 Date
Edward S. Piatt Signature of Dissertation Adviser	10/19/19 Date
Signature of Dissertation Reader	10/19/2019 Date
Signature of Dissertation Coordinator	10/19/2019 Date
Signature of Program Director	10/19/2019 Date
James T. Piatt Signature of Dean, School of Graduate and Continuing Studies	10/25/19 Date

ACKNOWLEDGEMENTS

Reflection is a powerful gift, because it gives you an opportunity to muse on the past and feel gratitude toward those who supported you in your pursuit of excellence. In my case, I'm grateful to Dr. Edward Piatt for his sincerity, encouragement, and direction regarding the dissertation topic and study. His insights and knowledge enabled me to hone in on the critical elements of the study. I'm also grateful to Dr. Timothy Eades for his optimism, encouragement, and feedback throughout the dissertation journey. His experience and review provided me with confidence in the process. My accomplishments are a product of their collective wisdom, honesty, and patience. I also want to acknowledge those project managers and practitioners, many of whom are my colleagues, who took the time to support my research, respond to my questions, and encourage me.

DEDICATION

It is said, behind every good man is a great woman. This is certainly true in my case. Moreover, my entire family has supported me these past two years. They sacrificed their own plans and pursuits, so I could concentrate and conduct research in a profession that has put food on our table for the past 25 years. I am forever indebted to my wonderful wife, Michele, who encouraged me daily. My children, Eddie, Aimee, and Conner also encouraged me and showed immense patience these past couple of years. My parents, Edward and Donna, instilled in me a powerful faith and dedication to family. Together, they set a great example and demonstrated leadership to me as a boy. One of the first Bible verses I memorized as a child was Proverbs 1:7. The scripture says, "the fear of the Lord is the beginning of knowledge, but fools despise wisdom and instruction" (NKJV). My reverence for the almighty has inspired me and been the reason for my experience and accomplishments. I dedicate this dissertation to my family and my Lord and Savior, Jesus Christ. "I can do all things through Christ who strengthens me" (Philippians 4:13, NKJV).

ABSTRACT

by

Edward L. Goans

Trevecca Nazarene University

October 2019

Major Area: Project Management Leadership Number of Words: 158

This was an exploratory and descriptive study on project management strategy and project performance factors. The project environment is characterized by internal and external factors that impact project strategy and performance. A quantitative study comprised of 226 project managers and project stakeholders in the state of Alaska explored the effects of project leadership authenticity, leader decision making, leader's emotional intelligence, and organizational culture on project strategy. A qualitative study comprised of 22 project managers in Southcentral Alaska explored the effects of geography on project strategy. The resultant project manager profiles for both the project planning and project implementation strategies were distinctive. The profiles took into consideration three environmental elements including the project manager, the project sponsor, and the project location. The application of resultant profiles to the profession in Alaska leaves the door open to future research. Likewise, an expansion of the project environment, project strategies, and project participants provide an opportunity for supplemental studies in the future.

TABLE OF CONTENTS

LIST OF FIGURES

Figure Page

LIST OF TABLES

CHAPTER 1

INTRODUCTION

"Space – the Final Frontier. These are the voyages of the starship Enterprise. Its five-year mission – to explore strange new worlds – to seek out new life and new civilizations – to boldly go where no man has gone before" (American Film Institute, 2013). In that same spirit of exploration and boldness, this researcher explored the project management environment for factors impacting project strategy and performance in the state of Alaska – the Last Frontier.

Project management is a tool or method for solving complex organizational problems (Packendorff, 1995; Soderlund, 2004). Project management is also a means of implementing organizational strategy (Bredillet, 2010; Kenny, 2003). Lastly, project management is a vehicle for delivering or implementing change (Christenson & Walker, 2008; Griffith-Cooper & King, 2007; Vidal & Marle, 2008). In all cases, the project management process is a means to an end. It stands alone as a temporary organization with a life span that is proportional to the project's overall scope (Ong, Richardson, Duan, He & Johnston, 2009; Packendorff, 1995).

Project management and performance literature suggests the process of managing a project can be done in one of two ways: the right way or the wrong way. The wrong way can end a project prematurely and damage a project manager's career (Zimmer, 1999), but the right way moves the project and the project manager closer to the finish line (Oyewole, 2004). Now there is more than one right way to manage a project, and the

right ways are often characterized with forward motion. Projects and organizations that do not move forward are unable to achieve critical goals and compete in contemporary markets (Eschenbach, 2013). Forward motion is the result of good decision making by a competent project manager within a particular setting (Craig, 2006; Meding, Wong, Kanjanabootra & Tfti, 2016; Rausch, 2003). Forward motion coupled with incremental success and emphasis on the most important aspects of managing a project result in progress. Unfortunately, the most important aspects of managing a project are not always obvious or easily discerned (Leybourne, 2009). When the important aspects of project management are recognized and combined with the appropriate methodologies, progress can be accomplished throughout a project's lifecycle (Joslin & Müller, 2016).

According to the Project Management Institute [PMI], "a project is a temporary endeavor undertaken to create a unique product, service, or result" (2017a, p. 4). The product, service, or result can be summed up as the project objective (Axson, 2010). A project may have more than one objective. Technical objectives, business objectives, and financial objectives can all become important project objectives. Shenhar and Dvir refer to project objectives as specified goals (2007). Reaching these goals can be challenging because the project management process is impacted by factors that are unaccounted for in theoretical frameworks (Oyegoke, 2011; Rolstadas, Tommelein, Schiefloe & Ballard, 2014). Some of these factors are associated with the project manager's personality and leadership abilities (Anantatmula, 2010), while other factors can be traced back to the organizational culture (Yazici, 2009) or physical setting (Jones, 2017a; Koehn & Brown, 1985). For example, good decision making is required for efficiently managing projects and promptly reaching goals. According to Craig (2018) "projects move at the speed of

decisions" (p. 25). Decisions are shaped by the project manager, the organizational setting, and the physical environment. Decisions also determine the project management process or strategy.

The process of managing a project can be described as a strategy or set of procedures (Mathur, Jugdev & Fung, 2013; Ziek & Anderson, 2015). It involves the careful application of knowledge, techniques, tools, and skills (Kenny, 2003; Zimmer, 1999). Processes or procedures are vulnerable to circumstances that are not necessarily visible or predictable (Collyer, 2016). Consequently, project managers must operate in an environment characterized by uncertainty and risk (Axson, 2010; Thamhain, 2013). Within this environment, project managers make judgments about when and how to apply their skills as a practitioner (Kenny, 2003). They must decide which procedures or practices to apply to the project throughout the project's lifecycle. For example, forgetting to order portable sanitation facilities for a remote jobsite can be more frustrating than an out-of-date drawing package (Ewers, 2013). Both are important, and the project manager must make judgments about the priority and delegation of such matters. This is especially important as project environments are susceptible to change due to forces outside the project manager's control. In such cases, the project manager must dig deep into his/her technical repository and select an appropriate solution based on experience and/or training. These solutions may be tied to project management guidelines or company procedures.

Procedures are written or generated in response to an anticipated or predictable environment to produce specific results (Turk, 2006). A commensurate level of performance is expected based on the procedure as it relates to the environment.

However, the environment under consideration is merely a snap-shot in time. Procedures are developed based on past events, not necessarily from what is happening or what will happen in the future (Turk, 2006). Project managers are accustomed to looking backward and contemplating what they might have done differently. There's nothing wrong with thoughtful reflection, but today's project manager must look forward because project management is evolving (Hutka, 2009; Shenhar, 2004). Yesterday's procedures were custom built for yesterday's domain, not today's unstable and ever-changing environment (Shenhar, 2004). The backdrop of the project management process only covers a range of environments or circumstances that are known and understood (Gluch & Raisanen, 2012). So, what happens when an unknown circumstance or environment suddenly manifests itself? Does the project management strategy take this into account? Project management researchers and theorists agree a gap exists in the research relating project environments to project methodologies and project performance (Joslin & Müller, 2016; Shenhar, 2004). Adapting the project management process or strategy to the environment is one way of securing an organization's future and prominence in the marketplace (Robinson, 2016). This security is an uphill battle for companies that strive to adapt in today's competitive business environment.

It can be a challenge for the project manager to adapt the process to the environment when the environment is uncertain. According to Axson (2010), uncertainty is the new normal for the world in which we live today. Political and global uncertainty is a reality, and this can destabilize markets, communities, and industries. Accelerated changes in the competitive environment, along with diversity in stakeholder expectations, can also blindside a project manager (Nidiffer & Dolan, 2005). The complications

resulting from uncertainty place the project manager in a vulnerable position (Page, 2010; Vidal & Marle, 2008). In this role, the project manager must carefully select the processes and tools most appropriate for the job in order to maximize performance (Axson, 2010; Besner & Hobbs, 2006; Kenny, 2003). As a manager, the project manager must plan, organize and control the resources allocated to the project, but as a leader the project manager must direct the project team toward the project objective(s) without falling victim to uncertainty and change (Anantatmula, 2010; Rockwood, 2017).

Projects that are being managed and led under uncertain and complex circumstances are at risk if the project manager is unable to read between the lines and establish a mitigation plan (Norrie & Walker, 2004; Skeen, 2012). According to Skeen (2012), a successful project "requires an effective delivery process that minimizes impact of the unexpected and uncertainties" (p. 23). In other words, the project manager must be able to filter out the environmental noise and apply the right tools with the right amount of pressure to accomplish the task. Reading between the lines involves assessing the environment and strategically adapting technical practices and/or business practices to the project management process (Angelides, 1999; Schiff, 2017; Shenhar, 2004). Project management procedures and frameworks are excellent references, but they have their limitations.

The project management process does not always have the answers; it may be lacking in solutions and direction related to its theory of project management (Morris, 2010). "Although PMI has put forth a usable framework for project implementation, there still remain gaps in the application of the framework that confuse many practitioners" (Perrin & Barrows, 2008, p. 14). This confusion can quickly lead to failure

if it impedes forward motion. The Project Management Body of Knowledge (PMBOK) is a great starting point for beginning practitioners as they embark on a career in project management, but these new project managers are susceptible to gaps associated with a stationary and stale process (Aubry & Lievre, 2010; Fretty, 2006; Ono, 1993). They may become disappointed with the project management process after passing multiple professional examinations and obtaining certification as a PMP or Project Management Professional (Perrin & Barrows, 2008). The process or framework provided by the PMBOK has limitations as many practitioners have experienced (Brewer & Strahorn, 2012; Fretty, 2006; Griffith-Cooper & King, 2007). According to Perrin and Barrows, the gap between the theoretical project management process and the manner in which real-life projects are managed is substantial (2008). Perhaps this gap or disconnect exists because the actual environment in which the project develops is different from the theoretical framework supported by the PMBOK (Morris, 2010). At this point, it is apparent that disconnects and gaps in the process can quickly derail a project and/or seriously delay its completion. The recognition and identification of gaps is important for staying on track from a project performance standpoint. An important deliverable for this research effort was to highlight those factors that result in project gaps and disrupt the project manager's pace and performance.

Bridging gaps in the project management process requires a certain amount of skill and improvisation. These gaps are related to the environment, whereas the improvisation and skill is related to the project manager's understanding of project delivery within an interval of time (Leybourne, 2009). The combination of environment and individual influences the response to a developing situation or problem (Malach-

Pines, Divr & Sadeh, 2009). The manner in which a project is managed, and a project's probability of success are dependent on two things: 1) who is managing the project, and 2) what are the characteristics of the project environment (Hassan, Bashir & Abbas, 2017). Incompetence in the project manager's leadership and uncertainty in the environment are a bad combination.

As a starting point, consider the project manager as the captain of a ship in a stormy environment. Like the ship, the project is in danger of shipwreck because of the tumultuous environment. The fate of the ship and all those on board is in the hands of the captain. Similarly, the fate of the project and the project team is in the hands of the project manager. A seasoned project manager has likely experienced the havoc of uncertain and complex environments on past occasions. Based on this experience, the project manager has gained familiarity with the terrain and confidence in negotiating the gaps and disconnects associated with stormy and uncertain environments. The research surrounding this topic is intended to provide today's project manager with insights into complex project environments. Adapting the appropriate strategies to the environment at the right time is key to realizing positive performance.

The project manager is ultimately responsible for the management of the project (Anantatmula, 2010; Schiff, 2017). He/she must recognize issues including uncertainty and take the appropriate actions (Gale & Brown, 2002). The project manager's experience, management skill, and leadership abilities influence his/her decisions related to process gaps, project complexity, and uncertainty (Barber & Warn, 2005). As environments and company strategies undergo change, so should the project manager's selection of tools and methods (Besner & Hobbs, 2006; Fewell, 2016). The project

manager must be on the lookout for these changes so he/she can adjust to the latest conditions.

In the project management realm, conditions are always changing as there is no shortage of unexpected events that must be dealt with throughout a project's lifecycle (Aubry & Lievre, 2010). Collyer (2016) uses the term *dynamism* to describe those aspects of a project that are inundated with rapid changes. These changes emanate from both the organizational setting and the geographical setting in which the project is managed (Burba, 2016; Collyer, 2016). Most projects are subject to a unique set of environmental factors that are dynamic in nature. Environmental factors can be found within the organization and may relate to stakeholders, organizational climate, and organizational culture (Axson, 2010; Joslin & Müller, 2016; Morrison, Brown & Smit, 2008; Yazici, 2009). Environmental factors also originate outside the organization and may be physical factors or human factors related to geography (Jones, 2017a; Koehn & Brown, 1985). These environmental factors can impede progress, negatively impact performance, and lead to failure. In this next section, several project environmental factors will be recognized as potential impediments to contemporary project management performance.

Statement of the Problem

Projects often fail because the project environment was ignored. According to the Gallup Business Journal, a recent study by Pricewaterhouse-Coopers revealed only 2.5% of organizations surveyed had successfully completed 100% of their projects (Hardy-Vallee, 2012). Another study published in the Harvard Business Review examined 1,471 projects. One in six projects exceeded the budget by 200% with an average overrun of

27% (Flyvbjerg & Budzier, 2011). Clearly, these projects are perceived as failures by their parent organizations. Important public projects, as well as projects headed by large organizations, are often associated with failures (Aubry & Liebre, 2010); project failures are not limited to a specific region or industry (Joslin & Müller, 2016). These failures are related to the project or business environment (Hossenlopp & Udo, 2004). According to Collyer (2016), the rapidly changing business environment is affected by a host of factors related to uncertainty and change. Today's ever-changing, high-velocity environments influence the project manager and the project management strategy or process that is in motion (Drouin & Jugdev, 2014).

Incidentally, the project manager and the process have a direct bearing on the project's progression and performance. The problem statement emanates from several sources including this researcher's own experience. This researcher is uniquely qualified to weigh in on some of the issues related to the project manager and the project environment.

1. This researcher has several technical credentials including a Project Management Professional (PMP) certification and a Professional Engineers (PE) certification within the state of Alaska. This researcher has managed projects including field construction for over 25 years; half of that time was spent on projects in the state of Alaska. Last but not least, this researcher has supervised and supported numerous project managers and engineers for over 15 years. These certifications and experience have afforded this researcher a unique perspective on project management strategy and project environments.

2. A thorough review of relevant and extant literature has shown a consistent failure to fully understand project environments and how to apply appropriate strategies for ensuring acceptable project success and project management performance. In the words of Peter Morris (2010), "the causes of success or failure lie in the way we develop and define the project – its goals and strategy" (p. 140).
3. Professional relationships create avenues for sharing stories of success and failure related to project management in the state of Alaska. Collaborative sessions with colleagues, coworkers, clients, and contractors have been invaluable in identifying trends and corroborating directions in technical publications.
4. Professional memberships including the Project Management Institute, American Society of Mechanical Engineers, American Welding Society, American Concrete Institute, and Alaska Process Industries Career Consortium have also provided various perspectives on issues related to project environments and construction initiatives in the state of Alaska.
5. Advice and technical reinforcement from academic advisors and instructors have truly benefited the development of the Project Management Strategy Attunement (PMSA) Model.

It is common knowledge within the project management profession that certified project managers are just as susceptible to project environmental forces as non-licensed project management practitioners. In general, projects don't fail due to a lack of competence or skill; rather projects fail because of unknowns associated with the project environment (Thamhain, 2010) and a misapplication of methods related to environmental subtleties (Rolstadas et al., 2014).

It is important for the project manager and project management office to be aware of changing conditions that may impact a project's environment. According to Robinson (2016), predicting the future and adapting the project strategy or process to the environment can be difficult, but it's not impossible if the environment is taken into consideration. As depicted in Figure 1, the project environment is shaped by the project manager, the project sponsor, and the project location. The factors related to these environmental elements include leadership, emotional intelligence, organizational culture, and geography.

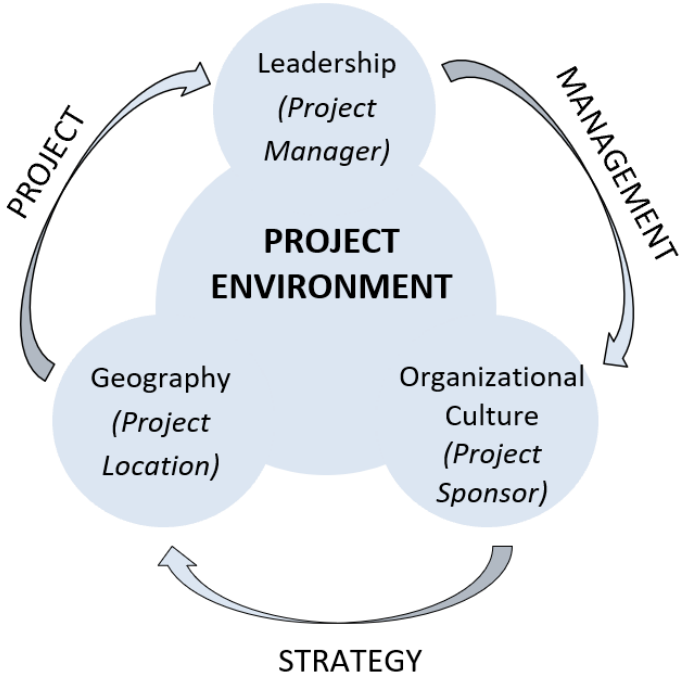


Figure 1: Project Management Strategy Attunement (PMSA) Model

The project management strategy must adapt to the ever-changing project environment so that the project manager can effectively plan the project and achieve the project objectives (Burgan & Burgan, 2014). This adaptation or improvisation must take into consideration leadership, organizational culture, and geography.

The project management process in Alaska is especially vulnerable to the project environment. According to Hossenlopp and Udo (2004), failing to consider environmental factors and/or miscalculating environmental changes can have disastrous effects on a project. Just to reiterate, a project's performance and the project manager's ability to navigate the project management process are influenced by the project environment (Axson, 2010; Ferrada & Serpell, 2016). Some of these factors are evident at the beginning of a project; other factors surface throughout a project's lifecycle. In either case, the project manager must defend the project against these factors to deliver a successful project that meets the technical objective. But a good defense requires knowing the offender and its capabilities. The great Chinese general and strategist, Sun Tzu, said, "If you know the enemy and know yourself, you need not fear the result of a hundred battles" (Jackson, 2014, p. 14). The project manager can apply Sun Tzu's logic by embracing the mantle of leadership, being comfortable in that position, and effectively leading a project team to the finish line. Furthermore, the project manager must be intimately familiar with the project environment. Translating this combined intimacy into an informed and robust defense eliminates all fear. However, a lack of knowledge in these areas puts the project manager and the project at risk.

Once again, three themes that emerge from the literature as factors that influence the project manager and impact the project management process are leadership, organizational culture, and geography. The purpose of this study is to explore these factors and the impact they have on project management in the state of Alaska. Knowing how these factors affect the planning and execution phases of a project is critical to successful project management. Developing a defense against these impacts is important

because project failure is not an option in Alaska − the Last Frontier. This next section will introduce the offenders evidenced in literature, including their relationship to project management strategy and project performance. These offenders or environmental factors include but are not limited to leadership, organizational culture and geography.

Rationale

Project environments are shaped and influenced by many factors including leadership, organizational culture, and geography. The purpose and rationale of this research is to understand how leadership, organizational culture, and geography affect project management strategy and performance in the state of Alaska. Furthermore, the intent of this research is to determine to what extent these factors affect project management strategy and performance. A detailed and extensive literature review of these factors revealed various perspectives and insights related to impacts on project strategy and performance. To begin with, project managers set the tone and pace of a project based on their portfolio size and status.

Project Strategy and Performance

Generally, an individual is appointed to manage a project based on their workload, expertise, experience, and personal effectiveness within the organization (Fretty, 2006). This individual is the team leader, but their official title is project manager (Hutka, 2009). Project performance or success is typically measured by how well a project performs based on established schedule, budget, quality, and customer satisfaction (Hughes, Tippett & Thomas, 2004; Verma, 2013). The project manager has some control over the performance criteria, but the project scope and environment are also major considerations (Hossenlopp & Udo, 2004). The project lifecycle is comprised

of four stages: 1) Starting the project, 2) Organizing and preparing the project, 3) Starting to carry out the project work, and 4) Closing the project (PMI, 2017, p. 19). The first two stages are considered the *planning phase* while the last two stages are considered the *execution phase*. There are five corresponding process groups: 1) Initiating, 2) Planning, 3) Executing, 4) Monitoring and controlling, and 5) Closing (PMI, 2017). These process groups correspond to the lifecycle stages. Several activities, milestones, and deliverables are included within each of these stages and corresponding process groups. For instance, the execution process group includes such things as commissioning and startup activities related to the project's field effort (Basillo, 2017). The deliverables in a given phase are usually requirements or prerequisites to the next sequential phase (Burgan & Burgan, 2014). For example, the project management plan is an output of the planning phase and a requirement or input to the executing phase (PMI, 2017). Another important consideration for project managers includes safe work planning and execution.

Safety and production are both hallmarks of a successful construction project for many companies and organizations (Holt, 2008). Safety entails observing safety and environmental rules, procedures, and regulations (Jasniecki, 2014; Noval, 2009); production entails efficient work processes and conventions that incorporate lessons learned, alignment, and teamwork (Fare, Grosskopf, & Lovell, 1994). These elements build upon one another and facilitate the successful execution of field construction. Once again, each of these elements has potential to be affected by project environmental factors. Thus, it is important for the project manager to defend these elements against the negative effects of project environmental factors.

The project manager's role is unique in that he/she represents the will of the organization in planning, executing and defending the project (Dimov, 2004). To that end, authority is granted to the project manager in accomplishing the project objective(s). From a legal perspective, the organization is required to support the project manager and vice versa in applying "prudent" and "reasonable" management in pursuit of those objectives or goals (Cleland, 1985, p.3). "Prudent and reasonable project management is characterized by the judicious use of resources in an effective and efficient manner so that project objectives are accomplished on time and within budget" (Cleland, 1985, p. 3). A competent project manager should be thoroughly familiar with the project objectives. Furthermore, as a champion of the organization, he/she should be reliable and effective in performing their duties.

Important elements or duties include effective leadership and management. The project manager should be familiar with proven management theories and systems as they manage company resources and lead project teams (Cleland, 1985). In this respect, the project manager is both a project leader and a project steward with the backing of the organization. With the project manager at the helm, the project management process must be weighed against the project objective(s). Over-management (too much process) can be a problem just like under-management (Fister, 2011). Experience and instinct can take the project manager a long way as they balance the needs of the project against the application of the process. The project environment in Alaska is unique in many respects, and this balancing act is necessary to ensure the right aspects of a project are appropriately managed.

The project management process in Alaska can be a treacherous journey (Bulger, 2012; Fister, 2011; Mole et al., 2013). Both the planning phase and execution phase are vulnerable to project environmental factors. One way to protect the planning and execution phases of the project management process and ensure superior performance is to understand the project environment and adapt the project strategy in a defensive manner. The project manager's own leadership ability is one of the first project environmental factors to consider.

Leadership

Project managers manage projects and lead project team members in pursuit of organizational and project objectives. Therefore, leadership is a core competency of experienced and successful project managers as they influence project outcomes and performance (Anantatmula, 2010; Barber & Warn, 2005; Gehring, 2007). In simple terms, leadership matters (Newton, 2009). Leadership is an important project environmental factor because it has potential to influence decisions, encourage innovation, motivate and support team members, and implement solutions that affect a projects performance within a particular setting (Brewer & Strahorn, 2012). Leadership in this context is independent of seniority, title or personal attributes (Kruse, 2013). The primary function of leadership is to motivate and guide a group of followers to achieve their potential and accomplish common goals that are important to the group (Northouse, 2016). Anca (2015) describes leadership as a social influence process that involves setting direction for the group, motivating behavior in that direction, and influencing the group to continue in that direction. Dimov (2004) describes project leadership as having three functions: 1) Establish direction for team-members, 2) Align team-members, and 3)

Inspire and motivate team-members. These three functions can influence the project management process as they set the tone for effective team-work and collaboration (Adams, 2009; Blattner & Bacigalupo, 2007). Many view leadership as a unique trait that is found in a select group of extraordinary individuals which enables them to lead a cohort of followers (Gehring, 2007). Others view leadership as a skill or ability that can be developed over time thereby enabling them to lead a group of followers (Newton, 2009). The definition of leadership has been debated for centuries and continues to be a topic of debate among leadership professionals and researchers (Maamari & Majdalani, 2016). A contemporary definition of project management leadership is the creation of vision, meaning, and new approaches to old problems (Shenhar, 2004). It suggests the project manager inspire, motivate, and create meaning for the team in the midst of change. According to Shenhar (2004), "the best project managers are also leaders, who inspire their teams with meaning and vision, and then make sure it is all done well" (p. 573). In short, leadership is an important factor that influences the project manager's ability to accomplish project objectives by implementing appropriate project strategy

As leaders, project managers must be willing and able to articulate the goals or objectives of a project to the project team. According to Norrie and Walker (2004), effective leaders with a sense of vision can influence and motivate their project teams by clearly communicating projects goals within the context of the organization's strategic objectives. This ability to look down the road and provide direction can energize a project team. A good leader will step up and outline the vision of a project. A compelling vision has the potential to motivate the team in putting forth individual and

collective effort toward the goal (Edmondson, 2016). In one sense, vision is the beginning of a powerful collaboration.

This powerful collaboration begins with the project manager and involves project teams that listen and communicate with the project manager. According to Schiff (2017), good leaders define the project objective(s), communicate the path for getting there, and motivate the team along the way. The late Warren Bennis defined leadership as "the capacity to translate vision into reality" (Kruse, 2013, p. 2). And that's exactly what a project manager does; he/she translates project objective(s) into reality. In essence, the project manager, the leader, is building a "bridge to the future," according to Bennis as cited in Hindle (2008). Vision is also valuable in communicating the project's purpose to the stakeholder group (Christenson & Walker, 2008). Leadership is in high demand when conditions suddenly change.

Leadership has a responsibility to take action when the business environment is uncertain, unsteady and unsettling (Norrie & Walker, 2004). When the business environment grows volatile and the path ahead appears dim, leadership must step up and bring clarity to the situation (Rockwood, 2017). Vision is a valuable leadership skill to the project manager as it provides initial traction to the project and direction to the project team. As a leader, the project manager not only provides vision, he/she provides motivation to the project team in pursuing project goals.

The project manager is in a position of influence and this influence can be used to enhance performance by motivating team members (Liu & Fang, 2006). Maxwell (2007) stated "leadership is influence … nothing more, nothing less" (p. 1). While this is true, influence and motivation require a source of power. A certain amount of power resides

with the project manager as they control resources and exercise authority over project teams and contractors. But the influence exerted by a project leader is social influence, not sole exertion of authority (Kruse, 2013). The project team and the project manager depend on each other to meet project milestones. Bennis often reflected on this mutual dependence (Bennis & Bierderman, 2011). His reflections had to do with his service as a platoon leader. He and his platoon depended on each other for survival. That mutual dependence was literally a matter of life and death. A similar mutual dependence is necessary for project managers and project team members to accomplish their mission. This connection between project leader and team members is based on trust and transparency and is proportional to the leader's ability to emotionally connect with his/her team members. Communicating vision and motivating team members is an easier task for those who are emotionally intelligent. Consequently, effective leadership is associated with emotional intelligence (Batool, 2013) and is directly linked to the project leaders rating in this area (Maamari & Majdalani, 2016). After all, leadership is a process of social interaction that involves relationships, motivation, and teamwork (Kerr, Garvin, Heaton & Boyle, 2005).

Emotional Intelligence

Emotional intelligence has to do with how well an individual understands, expresses, and regulates their emotions within a social setting. It includes the ability to recognize, understand, respond to, and regulate the emotions of others in that same social context (Maamari & Majdalani, 2016). Since leadership is an emotional process, emotional intelligence is very much related to leadership effectiveness and project performance (Kerr et al., 2005). According to Goleman (2014), emotional intelligence is

made up of five dimensions: 1) Self-awareness, 2) Managing emotions, 3) Motivating others, 4) Showing empathy, and 5) Staying connected. Unlike general intelligence (IQ), emotional intelligence (EI) is related to social intelligence and can be learned over time as individuals focus on those dimensions that are lacking (Goleman, 1995; Johnson, 1999). The five dimensions proposed by Goleman translate into four leadership functions: 1) Self-awareness, 2) Self-management, 3) Social awareness, and 4) Relationship management (Klein, 2009). As a leader, the project manager must enhance his/her emotional intelligence.

Clearly, the focus of emotional intelligence begins with the leader and ends with his/her relationship to others. Understanding one's own emotions is a prerequisite to understanding the emotions of others (Sechelariu, 2012). Project managers spend most of their time interacting with team members and stakeholders (Maqbool, Sudong, Manzoor & Rashid, 2017) which means mastering the art of positive interactions is a key to project success (Blattner & Bacigalupo, 2007). Managers who possess emotional intelligence tend to create positive working atmospheres through meaningful relationships with team members who enjoy support during stressful times (Langhorn, 2004). These same managers project an optimistic outlook toward social responsibility and profit contribution within the stakeholder environment (Langhorn, 2004). Positive emotions tend to encourage creativity and instill a sense of job satisfaction (Li, Gupta, Loon & Casimir, 2016). Successful project performance and leadership effectiveness is dependent on social interactions and emotional intelligence which are often labeled as soft skills.

Leadership is a project environmental factor that influences the project manager's effectiveness and impacts the project management process. Project manager competency in leadership, management and communication are non-negotiable in today's business setting and are necessary for success (Khattack, Mustafa & Shah, 2016). Leadership is at the top of the list when it comes to important project environmental factors. To what extent does leadership affect project management in the Last Frontier? Do good project managers make good leaders, or do good leaders make good project managers? Which aspects of leadership are the most important when it comes to successful project management? How can project managers defend the project management process in this area of leadership? These open-ended questions serve as a great starting point for those who are interested in project management leadership. Notwithstanding, project environments are also shaped by organizational culture.

Organizational Culture

Organizational culture is another important project environmental factor, because it affects the project management process (Andersen, Dysvik & Vaagaasar 2009; Morrison et al., 2008) and project performance (Smits, 2017). After all, people from within the parent organization are occupying temporary roles as team members or project stakeholders (Andersen et al., 2009). According to Schein (1986), organizational culture is a deep phenomenon that rises to the surface on occasion and is manifested in the behaviors of those within the organization. Simmons (1996) compares organizational culture to an artichoke where culture is comprised of multiple layers that affect the performance of the organization and its members. Smircich, 1983, as cited by Cheung, Wong and Lam (2012), describes organizational culture as "the social glue that holds

members in an organization together" (p. 689). In all cases, culture is lurking just beneath the surface, like an iceberg, capable of causing great damage to the unsuspecting project which is being managed by an otherwise capable project manager. According to Longman and Mullins (2004), an organization's culture often remains hidden as part of the implicit framework of the organization while exercising a gravitational like force on decision making. Since organizational culture has this universal force, it has potential to make or break a project.

One of the main causes of project failure is ignoring organizational culture (Smits, 2017). An appropriate definition of organizational culture is necessary to understand its source and strength and avoid victimization. As defined by Schein (1984), organizational culture is a collection of basic assumptions that a group has learned and adopted as a way of doing business due to its experience in solving problems. Furthermore, the group considers these assumptions to be valid, and they are taught to new members as the right way to see, feel, and think about problems (Buch & Wetzel, 2001). Moreover, a group's culture is comprised of various practices, doctrines, and values that assist in understanding how it functions (Linn, 2008). Given this definition, it is easy to comprehend just how vulnerable a project is to organizational culture.

Likewise, Wiewiora, Murphy, Trigunarsyah and Brown (2014) acknowledge projects are heavily impacted by the culture in which a project is managed. Organizational culture can affect the effectiveness of the organization (Song, Le & Wang, 2017) including social interaction, communication, and knowledge sharing (Wiewiora et al., 2014). Project-based organizations thrive in cooperative environments where information is shared across functional groups and between team members. In contrast,

projects are very much at risk if the organizational culture is one that hoards information and works in knowledge silos (Wiewiora et al., 2014). Recognizing and interpreting the organizational culture could be challenging as culture may vary throughout a given organization.

The parent organization may have an organizational culture that is different from the many business units making up the parent organization. These business units often have their own subcultures, and these subcultures may be as strong and influential as the parent organizational culture (Irwin, 2007; Schein, 2009). For example, a parent organization may promote sharing lessons learned and creating best practices for the entire company (Levin & Rad, 2007). But a subculture in the operations group may oppose creating best practices because of an individualistic subculture trait (Loo, 2003). Reconciling these clashing cultures can lead to tension and conflict, especially for a temporary project organization caught in the middle (Smits, 2017). By its very nature, organizational cultures are resistant to change, and this can be problematic for a project manager who serves as an agent of change (Morrison et al., 2008). This agent of change is at a disadvantage in many organizations and may find little support from upper management.

Right from the start, the project manager is at odds with the organizational culture. He/she must recognize this fact and accommodate the differences in perception without causing detriment to the project or project team. Organizational cultures are immortal compared to the lifespan of a project or temporary organization (Packendorff, 1995; Soderlund, 2004). A project cannot outlive the organizational culture. Therefore, the project manager must compensate so the project can run its lifecycle and achieve the

project objective(s) established in the beginning. An area of concern within the organizational culture involves stakeholders and stakeholder expectations related to the project.

The stakeholder environment is always changing, and this can influence the project manager's ability to lead a project. Stakeholders may be present inside the organization or outside the organization (Sutterfield, Friday-Stroud & Shivers-Blackwell, 2006). In both cases, stakeholders shape the organizational culture and influence the project management process. The empirical view of stakeholder management sees project stakeholders as those individuals directly or indirectly affected by a project (Sutterfield et al., 2006). This classic view of stakeholder perception is an inward view where stakeholders are looking in at the project. The alternative view is an outward view where projects, project teams, and project managers, are looking out at the stakeholders.

Therefore, the instrumental view of stakeholder management sees project stakeholders as those individuals who influence the organization's project (Reed, 1999). In both cases, stakeholders can make or break a project as their behavior in response to a project will either help or hinder the project manager's efforts. Creating a stakeholder map is an excellent way of identifying stakeholders and their connection to the project (Huse & Eide, 1996; Kangas, 2016). The map will change from one project to the next as the list of stakeholders is revised. It is important for the project manager to get the big picture by treating every project as a unique and independent endeavor. Bourne and Walker (2008) proposed five steps for better understanding the stakeholder field. These steps include: 1) Identify, 2) Prioritize, 3) Visualize, 4) Engage, and 5) Monitor (Bourne

& Walker, 2008, p. 126). These five steps are a great starting point for getting a sense of who's pushing or pulling in what direction.

Organizational culture is an important project environmental factor that influences the project manager's effectiveness and impacts the project management process (Fister, 2011). Organizational culture is a complex matter that can be simplified to "the way we do things around here" (Schwartz, Gaito & Lennick, 2011). To what extent does organizational culture affect project management in the Alaska? Which has a greater impact on project management, organizational policy, stakeholders, or politics? How can project managers defend the project management process against the negative influences of organizational culture? These honest inquiries provide a clear path for those who are interested in the effects of organizational culture, but a thorough examination of the project environment should include the geographical aspects.

Geography

Geography is another important project environmental factor because it can influence the project management process and negatively impact a project's performance if not taken into consideration. In the area of project management, it is important for the project manager to have clear and concise technical objective(s) and sufficient resources to get the job done (Prabhakar, 2008). The technical objective is a predecessor to the work breakdown structure (WBS); the technical objective is the primary reason for the project in the first place (Burek, 2011). It is the common thread that weaves throughout the project's lifecycle and creates alignment and shared purpose for the project team (Anantatmula, 2010). If the project manager loses focus and the technical objective is compromised or resources run low, the project manager can lose control of the project

(Johnson, 2015). The technical objective is the main thing; everything else has potential to be a distraction.

A primary cause of distractions in Alaska is geography. A few examples of geography include land-forms, weather, transportation, and community. Some of these items are physical or tangible, while others are less physical or intangible. The intangibles tend to be those items that introduce risk and uncertainty to the project environment. It's difficult to plan for the unknown. These uncertainties or unknowns can disrupt the project baseline and inflict irreparable damage to the project (Sturiale, Chicca & Gerosa, 2017). According to Sumner (2004), human beings struggle to survive in hostile environments here on planet Earth. Faced with the same harsh realities, project managers struggle to manage projects in hostile environments here on planet Earth (Fister, 2011). Hostilities exist in both urban and rural settings as mother nature is no respecter of persons or population centers. Some regions and states within the United States are more prone to hostile environments than others.

The state of Alaska is one of those hostile environments in many respects. The Alaska Partnership for Economic Development (2009) states, "Alaska is a relatively new state that is remote from other business or industrial regions and has under-developed infrastructure, high energy and labor costs, and severe geographic and climate conditions" (p. 2). From a geographic perspective, Alaska is certainly at a disadvantage when it comes to project management. This disadvantage is related to factors ranging from poor communication and transportation infrastructure to extreme weather conditions. These factors generally fall into one of two categories.

Geography is typically approached from two different perspectives and geographical elements can be separated into a physical geography or human geography category (Sumner, 2004). In both cases, geography is about place (Matthews & Herbert, 2008). In other words, every location on this planet has unique properties that encompass the earth's surface, what's below the surface, the atmosphere above, and the social and cultural attributes of the people living in that location (Matthews & Herbert, 2008). Alaska is a special place that has unique physical and human geographical characteristics. Projects executed in the state of Alaska can be affected by factors from both categories (Fister, 2011). Physical geography includes rocks/minerals, landforms, soils, animals and plants, water, atmosphere, rivers/lakes, environment, climate/weather, and oceans (Pidwirny, 2006). Human geography includes population and settlements, economic activities, transportation, recreational activities, religion, political systems, social traditions, human migration, agricultural systems, and urban systems (Pidwirny, 2006). Any one of these elements can surface as a distraction to the unwary project manager.

Physical geographical factors can quickly distract a project manager and cause confusion and frustration for the project team. Alaska is referred to as the Last Frontier because its landscape is vast and rugged. Alaska is predominantly wilderness area with a few small towns and villages situated throughout the state (US Census Bureau, 2017). So, the environment in which projects are executed in Alaska is both remote and rural. A skilled and timely workforce is not an easy achievement, and this can quickly distract the project team, especially during the execution phase of a project. Personnel may be unwilling or unable to travel to remote jobsites.

Many of the projects executed in Alaska are remote meaning they are inaccessible from the road system. This complicates the seemingly easy task of getting equipment, materials, and workers to the jobsite (Ewers, 2013). Construction materials and equipment for major projects can also be difficult to locate which adds unbudgeted costs if the materials must be shipped in from the Lower 48. Because of the rural nature of the area, amenities and accommodations can be limited during the construction season. This poses additional problems for lodging contractors who are from another region.

Remote areas are inhabited by wildlife including predators such as bears and wolves. Alaska is unique in that all three species of North American bears thrive within the state including black bears, brown bears, and polar bears. In fact, 98% of all brown bears (aka. grizzly bears) reside in the state of Alaska (Alaska Department of Fish and Game [ADFG], 2018). This increases the likelihood of human-bear encounters when working at remote job sites. According to Woodford (2016), brown bears can achieve a 40 mile per hour charge in as little as 16 foot; they can see in color, and their sense of smell is seven times greater than a blood-hound (Woodford, 2016). Special security measures must be taken to protect field personnel from wildlife encounters. Security personnel who are trained to dissuade human-bear interaction (aka. hazers) are hired to provide this service. Alaska biologists have tazed over 300 bears and paint-balled another 100 near Sitka since 2010 (Woodford, 2016). In effect, these biologists are conditioning the bears to avoid human contact and stay out of areas occupied by remote workers and recreational enthusiasts (Woodford, 2016). Alaska's bear problem extends north of the Arctic Circle to the Beaufort Sea.

Alaska is the only state that borders two oceans; the Pacific Ocean and Arctic Ocean; the Beaufort Sea is a part of the Arctic Ocean. The barren landscape is void of many resources and infrastructure relied upon by project managers in normal environments. Furthermore, Alaska is separated from the Lower 48 states by an entire country, Canada. This isolates the 49th state, the Last Frontier, from the Lower 48 contiguous United States. These factors are not just inconvenient, they are distractions.

Geography is an external factor that impacts the project management process by introducing distractions that complicate project completion. It impacts the project manager as implementation of work tasks and processes can be difficult (Rajvanshi, 2010). Geography is a wide topic that encompasses both physical and human aspects of the environment. To what extent does geography affect project management in the Last Frontier? How does this compare to the other project impact factors? How can project managers defend the project management process against geographical impacts? These questions barely scratch the surface when the potential impacts of geography on the project environment are taken into account. Nevertheless, several important research questions emanate from the literature review associated with leadership, organizational culture and geography.

Research Questions

The project environment in the state of Alaska is shaped by factors that influence project strategy and impact project performance. The project manager must defend the project management process against these factors in order to deliver a successful project. The project manager, the project sponsor, and the project location are unique constituents of the project environment. This researcher has identified four project environmental

factors related to these constituents that affect project strategy and performance. These factors include: leadership, emotional intelligence, organizational culture, and geography. The purpose of this study is to determine to what extent these factors affect project management strategy and performance in the state of Alaska.

1. To what extent did leadership impact project strategy and performance in Alaska?
2. To what extent did emotional intelligence impact project strategy and performance in Alaska?
3. To what extent did organizational culture impact project strategy and performance in Alaska?
4. To what extent did geography impact project strategy and performance in Alaska?

A project manager has no stuntman; he/she must get it right the first time and proactively account for the unknown. Understanding the nature and magnitude of these project environmental factors is a precursor to developing a formidable defense and attuning project management strategy. Collectively, these factors are capable of wrecking a project resulting in traumatic loss for the project manager, project team, and sponsoring organization.

Description of Terms

Agile. Agile is a mindset, defined by values, guided by principles, and manifested through many different practices. The agile approach to project management is generally applicable to high-uncertainty project work (PMI, 2017b, p. 16).

Appraise. Appraise is the first stage in the FEL process. Appraise is also referred to as FEL1. Appraise includes conceptual screening to assess the economic viability of a project, in order to meet a legal requirement or to develop an opportunity or a business

plan (Basillo, 2017, p. 1). FEL1 identifies project opportunities to deliver the business case. Appraise estimate quality is typically +/- 50%.

Budget. The budget is the approved estimate for the project or any work breakdown structure component or any schedule activity (PMI, 2017a, p. 700).

Commission. Commission is the second stage after the FEL process is complete. Commission or pre-operation includes activities related to the system functional testing, including mechanical strength testing, cleaning, conditioning and delivery to the final customer (Basillo, 2017, p. 1).

Construction. Construction is the physical implementation of a project plan involving the application and combination of skills, materials, and physical labor. Sequence is important as layers of operations are planned based on project objectives (Sears, Sears, Clough, Rounds & Segner, 2015). Construction commences at the conclusion of the FEL process. Construction is the implementation of the FEL3 project plan and is part of the execute phase.

Define. Define is the third and final stage of the FEL process. Define is also referred to as FEL3. Define includes the execution of engineering design on the preferred option selected in the previous phase aiming at generating the technical documentation necessary to contract the execution of the project (Basillo, 2017, p. 1). FEL3 defines the project plan and finalizes the scope, cost, and schedule. Define estimate quality is typically +/- 10%.

Dynamism. Dynamism is taken to be a dimension of a project that represents the extent to which the project is influenced by rapid changes in the environment in which it is conducted (Collyer, 2016, p. 111).

Emotional Intelligence (EI). Emotional intelligence is the ability to perceive emotion in others and express one's emotions; use emotions to guide thinking in self and others; understand how emotions operate; and manage and regulate emotions in self and others (Sy & Cote, 2004, p. 448).

Execute. Execute is the first stage after the FEL process. The execute phase proceeds the planning phase. Execute includes detailed engineering, design, procurement, construction and installation of the project (Basillo, 2017, p. 1). This stage supports the completion of procurement and construction and represents the implementation of the project plan.

Front End Loading (FEL). The front-end loading process is a gated process used to develop a project in three phases. Each phase provides additional detail that builds upon the previous phase. This results in refined scope definition and facilitates a final decision regarding implementation funding. The project is progressively defined in increasing business and technical detail. This enables the team to assess project viability and prepare for project execution (Basillo, 2017).

Geography. Geography is the study of places and the relationships between people and their environments. Geographers explore both the physical properties of Earth's surface and the human societies spread across it. They also examine how human culture interacts with the natural environment and the way that locations and places can have an impact on people. Geography seeks to understand where things are found, why they are there, and how they develop and change over time (National Geographic, 2017, para. 1).

Human geography. Human geography is the study of the distribution of networks of people and cultures on Earth's surface (National Geographic, 2017, para. 3).

Improvisation. Term used to describe the use projects-based techniques that concentrate on exploratory and adaptive management. These techniques utilize experimentation, intuition and creativity. This approach to project management is contrary to the prescriptive approach (Leybourne, 2009, p. 520).

Leadership. Leadership is the art of motivating a group of people to act towards achieving a common goal (Ward, 2017). Leadership is a complex phenomenon, involving the constant interaction of three essential elements: the leader, the followers, and the surrounding situation or context (Wren, 1995, p. 125).

Lower 48. The Lower 48 refers to the 48 contiguous states comprising the mainland of the United States of America in North America (Ritter, 1993).

NOAA. The National Oceanic and Atmospheric Administration is a scientific agency within the United States Department of Commerce. NOAA provides research and data related to the ocean and the atmosphere. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it (National Oceanic and Atmospheric Administration [NOAA], 2017).

Operate. Operate is the third stage after the FEL process. Operate includes regular system operation in accordance with the technical specifications (Basillo, 2017, p. 1).

Operate includes checking the health of the operation and developing and gathering feedback for the future.

Organizational Culture. Organizational culture is the pattern of basic assumptions accepted and used by an organization. As a result, the people in the organization think, feel, value, and act in alignment with ideas, meanings and beliefs that are shared by the organization (Andersen et al., 2009, p. 480).

Physical geography. Physical geography is the study of Earth's seasons, climate, atmosphere, soil, streams, landforms, and oceans (National Geographic, 2017, para.2).

Project Manager (PM). The project manager is the individual assigned by the performing organization to lead the team that is responsible for achieving the project objectives (PMI, 2017a, p. 52). The project manager is also the individual assigned to manage, plan, and implement the project.

Project Management Body of Knowledge (PMBOK). A guide that provides project managers with the fundamental practices needed to achieve organizational results and excellence. The guide is published by the Project Management Institute (PMI, 2017a, p. 716).

Project Management Institute (PMI). The world's leading not-for-profit professional membership association for the project, program and portfolio management profession. Founded in 1969, PMI delivers value for more than 2.9 million professionals working in nearly every country in the world through global advocacy, collaboration, education and research (PMI, 2017c).

Politics. Politics is about the social exercise of power; politics encompasses a broad range of situations in which people's objectives vary, but in which they work together to

achieve those aims they have in common as well as competing where aims conflict. Both co-operation and competition may involve bargaining, argument and coercion. Politics may often be more an art than a science, and the art of politics may often be to see the potential for alliances rather than antagonisms amongst differing groups (Tansey & Jackson, 2014, p. 7).

Production. Production is the pursuit of objectives under constraints that result in outputs with constrained efficiency measures. Constraints could be financial, environmental, regulatory, etc. (Fare, Grosskopf & Lovell, 1994).

Project Management Professional (PMP). The PMP is a certification granted by the Project Management Institute. It signifies the individual speaks and understands the global language of project management. It requires verifiable work experience, secondary education and passing the PMP examination. It is the most important industry-recognized certification for project managers (PMI, 2017d, para. 6).

Quality. Quality is the degree to which a set of inherent characteristics fulfills requirements (PMI, 2017a, p. 718).

Risk. Risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives (PMI, 2017a, p. 720). Risk is analyzed from two perspectives: 1) by the probability an event may occur. 2) by the consequence associated with the event.

Safety. Safety is the state of being protected from hurt, injury, or loss. It implies a condition of wellness (Holt, 2008). Project safety involves a strategy that identifies hazards and addresses health and safety concerns during the planning and execution phases of a project.

Schedule. A project schedule is an output of a schedule model that presents linked activities with planned dates, durations, milestones, and resources (PMI, 2017a, p. 717).

Scope. Scope is the sum of the products, services, and results to be provided as a project (PMI, 2017a, p. 131).

Scope of Work (SOW). The scope of work refers to the work performed to deliver a product, service, or result with the specified features and functions required to meet the project objectives (PMI, 2017a, p. 131).

Select. Select is the second stage of the FEL process. Select is also referred to as FEL2. Select includes development, evaluation, and selection of conceptual alternatives for the continuous development of the project and confirmation of economic viability (Basillo, 2017, p. 1). FEL2 is used to determine the preferred project option. Select estimate quality is typically +/- 30%.

Stakeholder. A stakeholder is any individual or group of individuals that is directly or indirectly impacted by a project. Conversely, stakeholders can impact a project directly or indirectly. Stakeholders can be internal or external to the project team or project scope (Sutterfield, Friday-Stroud & Shivers-Blackwell, 2006, p. 27).

Vision. A vision is the image that a business must have of its aims and goals before it sets out to reach them. According to Bennis, this image, which we call a vision, may be as vague as a dream or as precise as a goal or a mission statement (Hindle, 2008, p. 209).

Work Breakdown Structure (WBS). A work breakdown structure is a hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables (PMI, 2017a, p. 161).

Significance of the Study

This study explored project environmental factors that impacted the project management process in the state of Alaska. This exploration uncovered important factors that have been missed in previous literature and expounded on factors that have been previously uncovered. Furthermore, this research connected various factors to one another as they related to the project management processes. This study was descriptive in nature, but a prescriptive component was also unveiled which may guide organizations and project management offices in effectively managing projects in an environment impacted by leadership, emotional intelligence, organizational culture, and geography.

Understanding the extent to which leadership, emotional intelligence, organizational culture, and geography impact project management is valuable to companies and businesses operating in the state of Alaska. The ability to understand the project environment and work within that environment is a key to project success (Irwin, 2007). According to the US Census Bureau, there are over 20,000 businesses operating in the state of Alaska (2017b). These businesses as well as government agencies in the state of Alaska will benefit from this study by recognizing and understanding these important factors that impact potential projects. Knowledge of these project environmental factors could result in significant cost savings if businesses fortify their project management processes against the hazards of deficient leadership, emotional intelligence, organizational culture, and geography.

The benefit to businesses operating in the state include cost savings related to improved project management processes that defend against environmental factors that go undetected. Benefits include a comprehensive understanding of project environmental

factors that may be more influential to specific project management groups. This understanding will enable regional managers to adjust the process to account for vulnerabilities associated with project impact factors in their region. These adjustments can improve team work, creativity, and efficiency throughout the company. By recognizing the impact factors and weaknesses inherent across different regions, the company will also recognize its strengths across the same regions. Strengths in one region may be weaknesses in another. This knowledge could result in cross training that benefits the entire organization. An indirect benefit could be changes in the allocation of work and compensation that improves the perception of fairness and distributive justice among employees. Other indirect benefits may include increased employee engagement and job satisfaction.

Process to Accomplish

The process to accomplish this research was based on a mixed methods approach which combines both quantitative and qualitative research methods to obtain, organize, and analyze data. While the quantitative and qualitative research methods differed, they offered this researcher the flexibility to examine project environments from two different perspectives.

A quantitative method was employed to investigate intangible project impact factors including leadership, emotional intelligence, and organizational culture. A qualitative method was employed to investigate a more tangible project impact factor, geography. The application of both methods offered assurances that underlying themes and issues related to project management would be discovered. As a result, important

insights related to project environments and project strategy were revealed from different perspectives.

The mixed methods research followed a phased approach beginning with a thorough literature review, proceeding to data collection, and ending with data analysis. The initial research phase included those processes used by this researcher to initiate exploratory research leading up to data collection.

Phase 1 Research Model

Phase 1 began with a thorough literature review based on scholarly articles and other apropos literature resources. The literature review identified several important elements that make up the project environment. The project manager, the project sponsor, and the project location were consistently highlighted as elements comprising the project environment. This phase culminated with data collection related to leadership, emotional intelligence, organizational culture, and geography. Phase 1 was characterized by the following elements:

1. A thorough and well-rounded literature review of scholarly journal articles and books from academic and professional literature sources.
2. Discussions and interviews with project managers and construction superintendents to understand their perspectives on project environmental factors that impact project strategy and success.
3. Final research objectives and questions were developed based on the literature review and collaboration with project managers and construction superintendents.

4. Review and selection of the most appropriate instruments for collecting data based on leadership, organizational culture, and project strategy and success constructs.
5. Development of grounded theory approach for collecting data based on geographical construct.
6. Administration of quantitative data collection via instruments and surveys to selected participants representative of project management professionals in the state of Alaska.
7. Administration of qualitative data collection via interviews, observations, and collection of craft artifacts.

Figure 2 illustrates the various steps and milestones associated with the initial phase, phase 1.

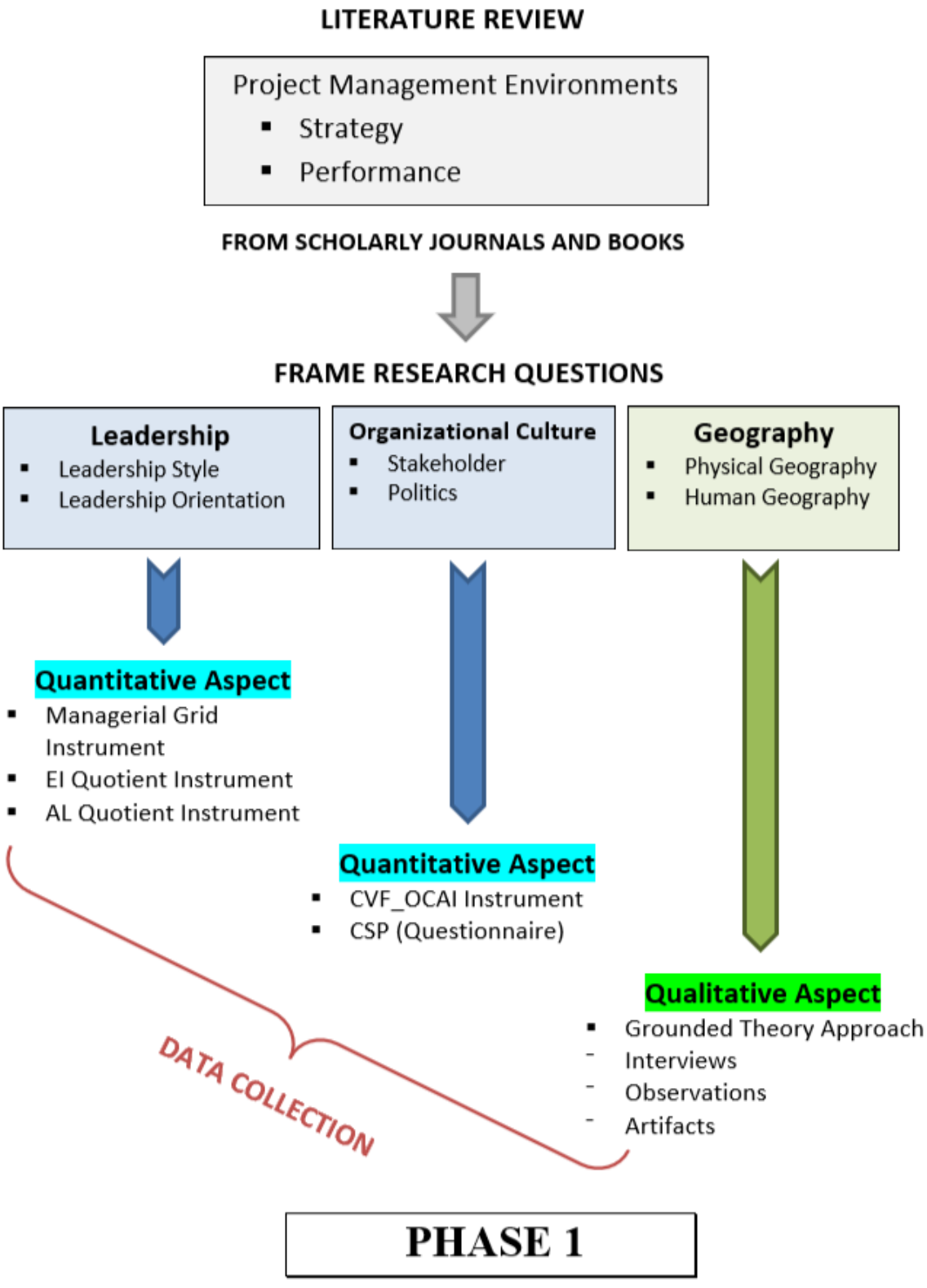


Figure 2: Process to Accomplish Model (Phase 1)

Phase 2 Research Model

Phase 2 started where phase 1 ended. Phase 2 used the data collected in phase 1 as a stepping stone to analyzing the pertinent data. This final phase of the research process involved several steps related to the analysis of data, interpretation of results, and summary of findings. Phase 2 was characterized by the following elements:

1. Descriptive statistical analysis including range, means, standard deviations, and quantitative interpretation of results related to leadership, emotional intelligence, and organizational culture.
2. Inferential statistical analysis including Analysis of variance (ANOVA) and interpretation of results related to leadership, emotional intelligence, and organizational culture.
3. Descriptive statistical analysis including range, means, standard deviations, and qualitative interpretation of results related to geography.
4. Inferential statistical analysis including bivariate comparison of means (correlation) and interpretation of results related to geography.
5. The results of this mixed methods research are reported in Chapter 4, along with suggested best practices and guidelines for improving project management performance.

Figure 3 illustrates the various steps and milestones associated with the final phase, phase 2.

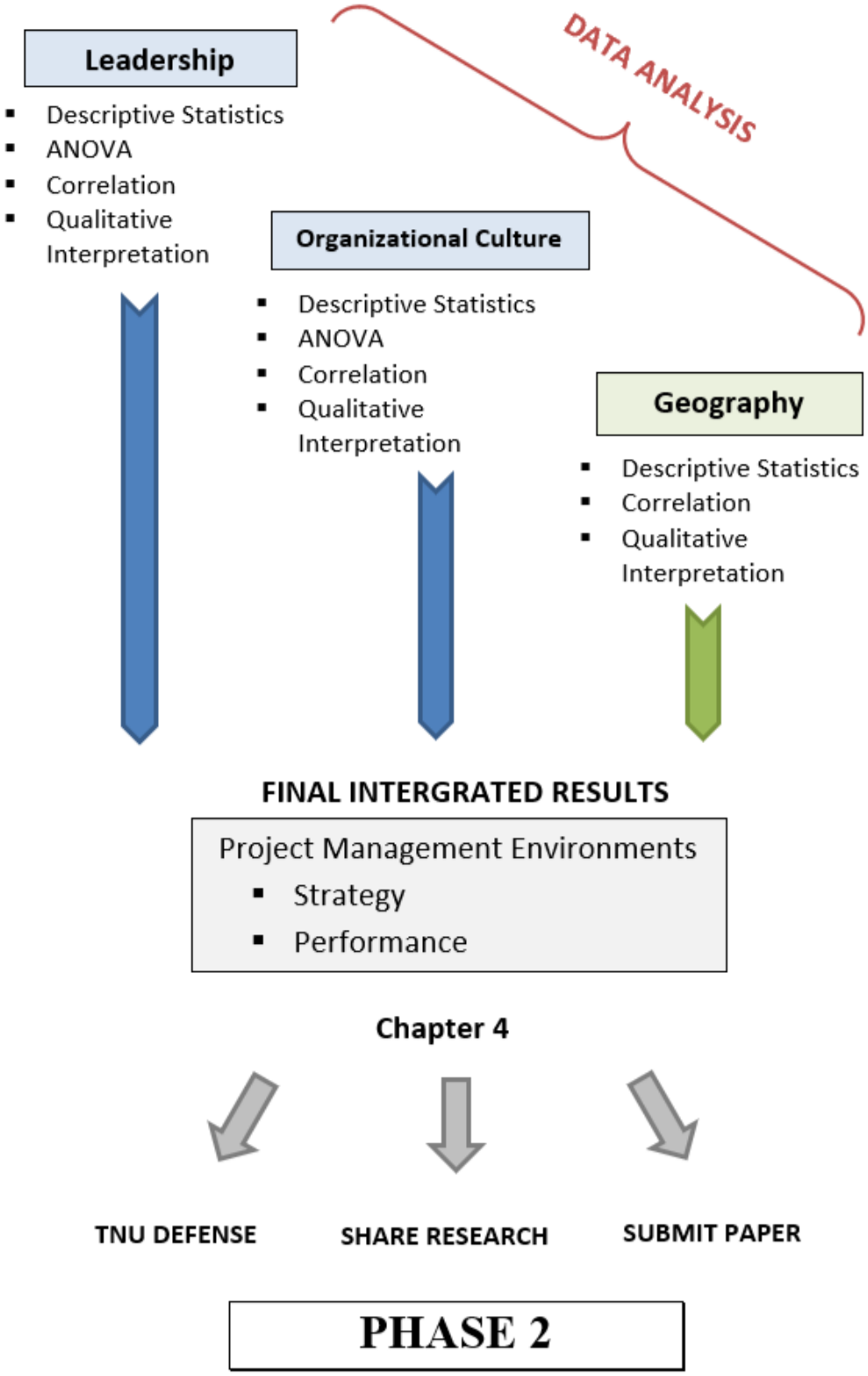


Figure 3: Process to Accomplish Model (Phase 2)

The mixed methods research approach applied to this complex topic promoted both objectivity from a quantitative perspective and subjectivity from a qualitative perspective. Participants contributed to the subjective aspect of the research by sharing their experiences and expertise related to project management in the state of Alaska. This subjective aspect enabled the researcher to gain a first-hand account of participant perspectives through keen observations and in-depth interviews. Furthermore, an investigation of organizational and environmental artifacts confirmed the researcher's understanding of geographical impacts on project strategy and performance.

The target population for this study was project managers operating or working within the state of Alaska. Many industries and entities employ project managers to manage projects that accomplish important organizational objectives. This diversity of industries has a couple of things in common: Location (state of Alaska) and Role (Project Manager). Rather than concentrate on a specific industry, the pool of participants shared an affiliation with the Project Management Institute (PMI), Alaska chapter. Some of the participants were members of PMI, while others simply managed projects within the state of Alaska without having an official membership with the organization. More than 650 individuals received an invitation to participate in the study. Over 220 individuals, nearly a third, participated in the quantitative phase of the research effort.

Gender, ethnicity, age, experience level, and educational background were not considered during the participant selection process. However, a variety of participants from all walks-of-life were represented in the study. A secondary population for the qualitative study was comprised of project managers working in Southcentral Alaska

which includes Anchorage and Kenai, Alaska. Twenty-two individuals participated in the qualitative phase of the research effort.

Several instruments were used to solicit input from the project manager participants. The Construction Project Success Survey (CPSS) instrument was used as a reference to collect relevant data from project managers based on their preference for a particular project strategy or focus on performance. This instrument quickly identified project strategies and associated those strategies with the project manager's prioritization or emphasis on a particular strategy. Six focus areas or strategies were reflected in the survey. These included scope, schedule, budget, safety, quality, and customer satisfaction. These variables were categorized as dependent variables that are influenced by environmental factors such as leadership, emotional intelligence, organizational culture, and geography.

The leadership factor was studied from two perspectives: leadership authenticity and leadership decision making. Once again, instruments were carefully selected to acquire relevant data related to this factor. The Authentic Leadership Questionnaire (ALQ) was used to identify the project manager's capacity as an authentic leader. The Jerrell/Slevin Management Questionnaire was used to identify the project manager's decision-making style. The questionnaire results in a grid that reflects the project manager's decision-making authority and openness to subordinate input.

The emotional intelligence factor was studied as a project manager trait. The Trait Emotional Intelligence Questionnaire (TEIque) was used to measure the project manager's emotional intelligence. The results from these instruments were tabulated and

used to compare the respective project environment to six different project management strategies referenced in the CPSS.

The organizational culture factor was studied using the Organizational Culture Assessment Instrument (OCAI) as a reference. Participants were asked to select an organizational culture that reflected their current project sponsor or employer. The resultant information was used to compare the respective project environment to six different project management strategies referenced in the CPSS.

A one-way ANOVA was used to identify significant interactions between the three independent variables, leadership, emotional intelligence, and organizational culture against each of the project management strategies.

The geography factor was analyzed and researched through individual interviews and observations using a grounded theory research design. The importance of both physical geography and human geography was verified through careful analysis of information obtained from the interviews and conversations with experienced project managers in Alaska. An examination of environmental artifacts and organizational archives further reinforced the assertion that geography is a relevant factor which is not to be taken lightly.

In conclusion, leadership, emotional intelligence, organizational culture, and geography were studied and analyzed in the context of Alaska's complex and ever-changing environment. The process used to conduct the study was carefully developed and implemented over an 18-month period. There were difficulties and challenges along the way. Nevertheless, the end result clearly surfaced a need to understand complex project environments and their impact on project strategy and performance.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

"Cosmic reveries separate us from project reveries. They situate us in a world and not in a society. The cosmic reverie possesses a sort of stability or tranquility. It helps us escape time. It is a state" (Bachelard, 2014, p. 164). On the other hand, project reveries revolve around the project environment which is ever-changing and characterized with uncertainty and chaos. The absence of order and the complexity of the environment have an enormous impact on the project management profession (Axson, 2010; Prabhakar, 2008). The concepts presented in Chapter I explored the project environment and the challenging role of the project manager. It was discovered that project managers operate within a haze of elusiveness without a clear understanding of what impacts the project environment (Collyer, 2017).

Project reveries attempt to bring stability, definition, and order to the otherwise volatile, ambiguous, and disorganized project environment. Bennis unknowingly describes the typical project environment when he states, "Life on this turbulent, complex planet is no longer linear and sequential, one thing logically leading to another. It is spontaneous, contrary, unexpected, and ambiguous" (2009, p. 19). Rising to the occasion, project managers attempt to make sense of this complex world and navigate the uncertainties and confusion that characterize the project environment.

How do project managers operate and achieve project objectives within such a precarious and undefined environment? Like a seasoned guide, project managers effectively traverse the project environment through the application of prudent and reasonable project management strategy (Bredillet, 2008; Besner & Hobbs, 2006; Angelides, 1999; Cleland, 1985). Project reveries invariably revolve around strategy and performance, both of which are influenced by the project environment. As discovered in Chapter I, the project environment is shaped by many factors including leadership, emotional intelligence, organizational culture, and geography. Each of these factors either directly or indirectly affect project constraints such as schedule and budget. Unlike Bachelard's cosmic reveries, project reveries are concerned with time and money.

Project managers bring order to projects by effectively using schedules and budgets (Burek, 2011; Craig, 2009; Angelides, 1999). An over-run budget or missed schedule does not set the stage for stability or tranquility. Experienced project managers know that schedules and budgets are only as good as the scope of work. The scope of work flows from the project objectives established by society, the organization or the individual serving as project champion. Project objectives are non-negotiable goals associated with the project. According to PMI, "a project is a temporary endeavor undertaken to create a unique product, service or result" (PMI, 2017a, p. 4). Given this definition, project objectives are clearly connected to the "unique product, service or results" needed or desired by the project champion.

Project champions recognize a need or problem within the organization or society. Fulfilling those needs or solving the problem begins with articulating the need or problem (Ong et al., 2009). This articulation is referred to as the business case which precedes the

project planning phase (Little, 2011). According to PMI, there are four origins of projects within a typical organization or enterprise. 1) Projects may originate as a means of complying with regulations and legal or social requirements; compliance is a requirement for continued operation. 2) Projects may originate to create, enhance or adjust products, processes or services that improve operations; continuous improvement is necessary for maintaining a competitive edge in the market. 3) Projects may originate to implement business strategies and new technologies or modify existing; maximizing leverage and capitalizing on business improvements is necessary for remaining viable in the contemporary marketplace. 4) Projects may originate as a means of satisfying stakeholder requests and meeting other business needs (PMI, 2017a). Regardless of the origin of projects, every project has a life-cycle that corresponds to the size and nature of the project scope.

Unlike Bachelard's cosmos, projects are finite; they are temporary in nature and have a definite beginning and end (PMI, 2017a). A project lifecycle describes and includes those phases that characterize all projects (Burgan & Burgan, 2014). Like any life-cycle, project maturity takes place within a project setting or project environment. This setting or environment affects the project management process and must be taken into consideration by project champions and project management offices (Loch, Mohring & Sommer, 2017; Thamhain, 2013; Axson, 2010).

The environment in which projects are managed is dynamic in nature. This means that the environment is constantly changing (Edmonson, 2016; Vidal & Marle, 2008; Hebert, 2002). Collyer uses the term dynamism as a description of how susceptible projects are to rapid changes in the environment (Collyer, 2016). The shape of the

environment is influenced by many factors. Some factors are more influential than others and must be taken into account by individuals tasked with managing the project (Shenhar, 2004). In the midst of these factors, "the role of project manager is to flexibly manage the dynamics of change" (Ong et al., 2009, p. 161; Hebert, 2002).

The strategies employed by project managers must be customfit to the project environment in order to optimize project performance and realize project success (Burgan & Burgan, 2014; Aubry & Lievre, 2010). Based on past research endeavors and literature reviews, some of the most influential factors on project outcomes include leadership, emotional intelligence, organizational culture, and geography (Jones, 2017a; Davis, 2011; Anantatmula, 2010; Yazici, 2009; Koehn & Brown, 1985). These factors can quickly derail a project by complicating the project management process and blind-siding the project manager with the unexpected. In order to simplify and clarify the nature of these factors, a model was developed in Chapter I depicting the formulation of project strategy.

Concepts Review

The researcher developed a Project Management Strategy Attunement (PMSA) model to describe the interference of primary environmental factors that should be taken into consideration by project managers (see Figure 1). In short, these factors influence project management strategy and ultimately affect project performance. In an effort to defend the project against such factors, the following questions were addressed:

1. To what extent did leadership impact project strategy and performance in Alaska?
2. To what extent did emotional intelligence impact project strategy and performance in Alaska?

3. To what extent did organizational culture impact project strategy and performance in Alaska?
4. To what extent did geography impact project strategy and performance in Alaska?

The answer to each of these questions begins with an understanding of project management strategy and project performance.

Concept 1: Project Management Strategy and Performance

Project management strategy and project performance are essential elements of the project management profession. Project management is one of the fastest-growing professions in North America (Hebert, 2002). As a result, project management guidelines and strategies are adopted by organizations and used by project managers to manage projects from start to finish (Davis, 2011). Most of these organizations and project managers subscribe to an existing project management methodology sponsored by a professional project management organization (Bredillet, 2010). Professional project management organizations and consortiums exist around the world. Each propose a functional framework for effectively managing projects

One of the most widely recognized organizations in the United States is the Project Management Institute (PMI). PMI was founded in 1969, operates in 80 countries and has over 500,000 accredited Project Management Professionals on their roster. The International Project Management Association (IPMA) is another popular organization with over 120,000 members (Marks, 2016, p. 24). Each of these organizations and consortiums propose viable frameworks and bodies of knowledge for managing projects. Yet, projects continue to fail at an alarmingly high rate (Khattak et al., 2016; Haji-Kazemi & Andersen, 2013; Yazici, 2009).

According to Andersen, Birchall, Jessen and Money, "the increasing turbulence in the modern business environment thwarts the rate of success for many projects" (2006, p. 127). This assertion is supported by rapid globalization, regulatory compliance, business acquisitions, changing asset values, compressed schedules, advances in technology, procurement challenges and structural changes in the economy. Furthermore, the fact that customers are better informed and vast amounts of information are readily available make for a competitive marketplace (Axon, 2010). Despite their connection to PMI and IPMA, many project managers fall victim to the ever-changing, uncertain, and complex project environment that is indicative of changes in the contemporary business world. The alternative to falling victim is overcoming the uncertainty of the environment and defending the project until victory is achieved.

Project Success Criteria

Project success is related to how well a project performs and measures up to the expectations and objectives established by the sponsoring organization. Both the planning and implementation of a given project have impacts on a project's success. For example, projects that are drafted and planned within the confines of an office must take into account scopes, schedules, budgets, resources, procurements, quality, communication, risks, and stakeholders (PMI, 2017a). In addition, the implementation or execution of the project must take into account safety, security, environmental protection, regulatory compliance, contractor selection, craftsmanship, production, and efficiency. The combination of these factors is all on the shoulders of the project manager assigned to manage the planning and implementation of the project. Project managers assume

great responsibility as their decisions and actions impact the achievement of project objectives and ultimately project success (Brewer & Strahorn, 2012).

Project success parameters encompass a wide range of factors including end-user participation, executive support, clear technical objectives, detailed planning, realistic expectations, critical milestones, competent technical staff, project ownership, unified vision, agreed upon objectives and conscientious team members (Attarzadeh & Ow, 2008). Based on these parameters, it is necessary for the project manager to possess knowledge and experience in both the human and technical side of the discipline (Brewer & Strahorn, 2012). Regardless of discipline, project success is determined using metrics that measure certain project performance criteria.

planning phase.

Project performance criteria have typically included cost (budget), time (schedule) and activity (scope) (Joslin & Müller, 2015). These three parameters form a triangle of balanced requirements (Els, Van der Merwe & Hauptfleisch, 2012). Projects that are managed within the allocated budget are typically viewed as successful in terms of cost by the sponsoring organization. Similarly, projects that are managed according to the agreed upon schedule are viewed as successful in terms of time by the project management office. Lastly, projects that meet technical objectives and result in quality designs are viewed favorably by the sponsoring organization or customer (Jha & Iyer, 2006). In other words, the quality of scope definition determines whether a project's technical objectives are met upon project completion. These criteria are viewed by most project managers as budget, schedule and scope.

The first two criteria, budget and schedule, are objective in nature and easily measured (Hughes et al., 2004). The last criterion, scope, is more subjective and not easily validated. In fact, scope implies how well a project's technical objective is translated into tasks or work elements (Burek, 2011). Scope definition is part of the planning process group and includes the formulation of a work breakdown structure (WBS) based on PMIs framework (PMI, 2017a). Project cost management, project schedule management, and project scope management are all part of the planning process group prescribed by PMI (PMI, 2017a). As such, these criteria are established during the planning phase of a project and are based on the project description and details surrounding the business case.

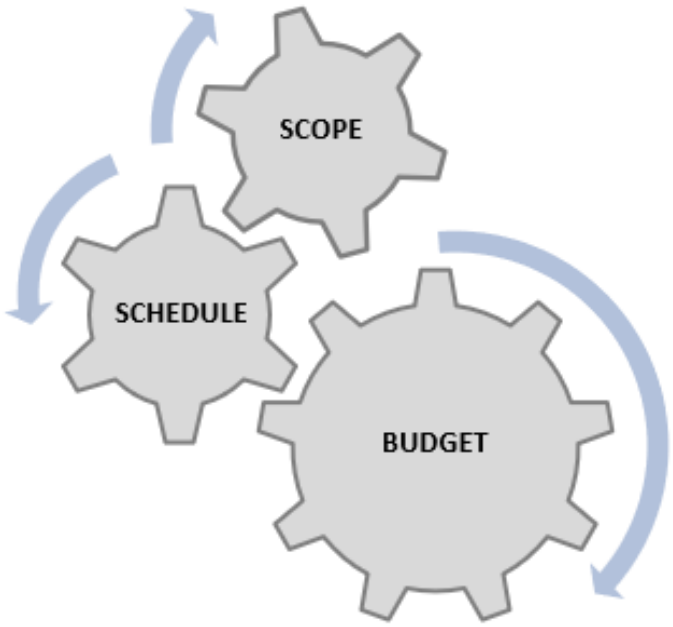


Figure 4: Project Performance Criteria (Planning Phase)

These criteria establish project boundaries according to budget, schedule and scope. The project manager is responsible for establishing these boundaries and implementing strategies that progress the project accordingly. Other project performance criteria must

be taken into consideration by the project manager as the project moves into the execution or implementation phase.

implementation phase.

Project performance criteria have expanded over time. Toward the end of the 20th century, researchers began to evaluate project success from other perspectives (Els, Van der Merwe & Hauptfleisch, 2012). "It was concluded that apart from the iron triangle and project management techniques, other dimensions affect the success or failure of a project" (Els et al., 2012, p. 6). Stakeholders were identified as a potential factor that affects the success of a project (Els et al., 2012; Toor, 2009; Bourne & Walker, 2008; Artto, Martinsuo, Dietrich & Kujala, 2008).

The term stakeholder can be applied to almost anyone associated with a project including internal and external constituents. In an effort to remain inclusive, general stakeholder satisfaction is considered a valid project performance concern. General stakeholders may include the parent organization, the project management office, the end-user, the regulatory body, and even the local community.

While the stakeholder network is a key factor to consider, customer satisfaction is probably a more accurate label for establishing whether a project is successful (Hughes et al., 2004). In some instances, the customer is paying for the project and may have expectations regarding certain attributes including but not limited to functionality, reliability, price, and timeliness. Obviously, it's in the project managers best interest to be aware of such expectations early in the process. Another important project success determinant encompasses the area of organizational safety and regulatory compliance.

Safety, worker safety and environmental safety, is a major factor that impacts project performance and ultimately project success. "Industry professionals have recognized that, on some projects, safety performance can be the primary determinant of success, regardless of the outcome of the other classical metrics. This is especially true of the public sector (government) and construction market" (Hughes et al., 2004, p. 31). Safety is important as both an ethical core value and compliance with regulatory agencies such as the Occupational Safety and Health Administration (OSHA).

OSHA was formed as part of the Occupational Safety and Health Act of 1970 and operates within the United States Department of Labor. "OSHA's mission is to ensure that employees work in a safe and healthful environment by setting and enforcing standards, and by providing training, outreach, education and assistance. Employers must comply with all applicable OSHA standards" (Occupational Health and Safety Administration [OSHA], 2018a, para. 1). OSHA places responsibility on the project organization for ensuring a safe work environment. "They must also comply with the General Duty Clause of the OSH Act, which requires employers to keep their workplace free of serious recognized hazards" (OSHA, 2018a, para. 1). Compliance with OSHA rules and regulations is essential for operating a business which includes managing projects.

Disregard for OSHA regulations can result in steep penalties and fines (Goetsch, 1993). Temporary closure of plants, operating units, or construction sites may occur until the organization can prove a mitigation plan was developed and implemented to improve the situation. Continued disregard may lead to permanently closing the doors at an operating plant or shutting down a construction project. State regulators are also

concerned with worker safety, and local regulations/codes may place specific restrictions on project work (Goetsch, 1993).

In general, personnel safety performance on projects is measured by several parameters or rates construed from the number of man-hours, recordable injuries, and first-aids that are experienced throughout a project's life-cycle. In fact, OSHA requires mandatory record-keeping in accordance with the Code of Federal Regulations, 29 CFR 1904 (OSHA, 2018b, para. 1). Some of the applicable parameters or rates include incident rate (IR), lost time case rate (LTC), days away restricted transfer rate (DART), and severity rate (SR). The OSHA Recordable Incident Rate (IR) is probably the most important parameter to OSHA and the project sponsoring organization.

The IR is calculated by multiplying the number of recordable injuries on a project times 200,000 and dividing that number by the total number of man-hours worked. The IR is a good indicator of safety performance. The goal of most project management offices and project managers is an IR of zero. This is a lofty goal that is attainable if the proper attention and priority are given to personnel safety during the implementation phase.

From an ethical perspective, safety is summed up in three words: "Do no harm" (George, 2006). This directive is universally accepted by businesses, organizations and individuals around the world. As organizations expand and evolve, the challenge to do so without endangering the public is of paramount concern (George, 2006). A moral obligation exists on the part of the parent organization to carefully manage projects to ensure the safety of workers, material assets, and the environment. A blatant disregard for safety may result in undesirable incidents and injury.

A project that is plagued by such injuries is destined to fail as delays related to incident investigations and corrective measures cost the project valuable time and resources. Furthermore, credibility and reputation are on the line in the eyes of the regulator who is empowered to administer fines and penalties on both the project owner and the construction entity. Negligence on the part of the project owner demands compensatory justice (George, 2006). It is in the best interest of the project manager to consider safety during both the planning and implementation of a project and avoid a charge of negligence.

As a valid performance metric, the project manager must develop and implement strategy that effectively promotes and results in safe work execution on a given project. Planning for safety is an important task for the project manager (Choudhry, Fang & Mohamed, 2007). Successfully rolling that plan into the field for implementation is an absolute requirement.

In addition to safe work execution, quality is a crucial project success factor to be considered. The likelihood of nonconformance and lack of quality increases when field execution goes unplanned or mismanaged (Angelides, 1999). Planning for quality is essential to having quality (Jha & Iyer, 2006). Quality is not free or cheap; it comes with a cost. The *cost of prevention* traces back to the planning details and includes making allowances in the budget for state-of-the-art materials and equipment (Angelides, 1999). Design reviews, drafting reviews, development of specifications, performance programs, craft training, procurement expectations, service agreements, and shop inspections are all part of the cost of prevention (Angelides, 1999).

Construction specifications that are ignored or followed half-heartedly are the result of poor craftsmanship and can lead to inferior quality. The old adage, "there is always time to do it right" rings true during the project implementation phase. The setbacks associated with rework place a heavy toll on the project budget. One mitigation is to deploy a formal inspection program that appraises construction during the implementation phase (Angelides, 1999). The *costs of inspection and appraisal* help to ensure quality throughout this phase and eliminate the need for rework after the project is placed into service (Angelides, 1999).

Discovering deficiencies in construction before commissioning an installation can prevent maintenance problems later if addressed properly. Formal appraisals may include evaluating every step of construction. A certain percentage of welds may be identified for radiographic inspection. A certain square footage of paint may be inspected for adequate coating thickness. A certain number of concrete cylinders may be inspected for sufficient compression before a structure is approved for erection. These are just a few examples of field testing that may be used to ensure quality construction methods are employed. Other costs include supplier surveillance, welder qualification testing, inspection and qualification records review, laboratory testing, and process control measurements (Angelides, 1999). The costs of prevention and the costs of inspection/appraisal are analogous to insurance policies against failure.

The penalty for undetected deficiencies in quality and craftsmanship is the *cost of failure* (Angelides, 1999). The costs of failure may be inefficient operations, unreliable equipment and machinery, hazardous operating conditions, and frequent maintenance. Other costs include field change orders, corrective actions, loss of production, and legal

counsel (Angelides, 1999). Competing constraints can often lead to poor quality since schedule is so visible to upper management; the quality of installation is often undetected until later.

Superior execution is characterized by customer satisfaction, safe work execution, and quality. The expectation for professional implementation should go without saying. However, the presence of a project manager in the field during construction reinforces the message and expectation for a safe execution that provides a high-quality product to the end-user.

Figure 5: Project Performance Criteria (Implementation Phase)

These criteria establish project boundaries according to customer satisfaction, quality, and safety. The project manager is responsible for establishing these boundaries and implementing strategies that progress the project accordingly.

Project Strategy

Project management is 50% strategy and comprehension of the changing environment, 40% management, and 10% technical application (Hebert, 2002). Project managers that succeed have learned to adapt to the environment. This adaptation requires a knowledge of the project management process and a knowledge of the project environment. Adaptation has to do with project strategy. Artto et al., define project strategy as "a direction in a project that contributes to the success of the project in its environment" (2008, p. 50). The project strategies employed by the project manager are a reconciliation of what is proposed in a generic project management manual and what is deduced as appropriate by the project manager given the project environment. The direction the project takes is directly related to the strategy employed by the project manager.

Project strategy is not a "one size fits all" proposition. "Every project is unique [and] requires a different approach when it comes to how the project should be managed. Applying the same amount of project management rigor to every project is wasteful" (Burgan & Burgan, 2014, p. 1). An experienced project manager can effectively adapt the existing framework or process to the actual project environment. Such adaptation is beneficial as it considers realistic features that may go unaddressed by generic frameworks and processes. In short, project strategies are developed based on detailed information pertaining to the project environment considering the unique project objectives set forth by the project champion or sponsoring organization.

Project strategies can be influenced by almost anything that exists in a project environment. For instance, "a project should consider its stakeholder network

complexity in its strategy selection, both when highly autonomous from and when subordinate to the stakeholders' interests" (Artto et al., 2007, p. 55). Stakeholders are part of the environment and must be accounted for as project strategy develops. Since stakeholders change from one project to the next, it's important for the project manager to revisit the strategy and modify as necessary. Revisions to project strategy are necessary to maximize project performance within a particular setting.

Project Performance

Project performance is the result of project strategy applied to a project within a project environment to realize success based on desired project success criteria. Since projects don't manage themselves, project performance is an indicator of project manager performance (Craig, 2009). "Performance measurement links strategy to action, motivates employees, supports budgeting and control, allows benchmarking, etc. all of which are geared toward improved performance" (Haji-Kazemi & Andersen, 2013, p. 717). The underlying proposition is that the project manager must ensure appropriate strategies are selected and employed. Furthermore, the project manager must motivate his/her team toward a desired outcome, manage the project within established boundaries, and implement lessons learned based on past project outcomes.

The role of the project manager is a unique role (Davis, 2011). The project manager is tasked with managing the project and successfully delivering the technical objectives set forth by the project champion or organization (Anantatmula, 2010). The project manager is not alone in his/her quest for successful project delivery. A project team is generally assembled to support the project (Adams, 2009). The project team serves under the authority and leadership of the assigned project manager. Thus,

leadership is an important project environmental factor that can impact a project's strategy and performance.

Concept 2: Leadership and Project Management

Project management researchers agree that leadership is a principal factor in the project environment (Ong et al., 2009). Project managers are both managers and leaders in as much as they define what needs to be done and then guide the project team in that direction (Dimov, 2004; Rausch, 2003). Project managers often use informal power to communicate vision, motivate team members, and engage the appropriate skills and tools at just the right time (Galvin, Gibbs, Sullivan & Williams, 2014; Hebert, 2002). The task and process management role of the project manager, *hard-skills*, is straightforward and can be learned through standard cognitive channels whereas project leadership involves effective social interaction, *soft-skills*, which take time to develop and master (Schiff, 2017; Norrie & Walker, 2004). The notion of leadership may sound easy but the ability to effectively interact with people requires excellent communication skills and powerful collaboration (Dubois, Hanlon, Koh, Nyauga & Kerr, 2015). Leadership competency is especially important when the business stakes are high, and the project team is unsure of the project environment.

Today's project environments are more complex and uncertain than ever (Collyer, 2016; Ong et al., 2009; Shenhar, 2004; Zimmerer & Yasin, 1998). Given this fact, the ability to read between the lines and implement appropriate methodologies is the key to success (Hebert, 2002). Unfortunately, project environments are not the same as corporate or functional management environments, and this complicates the project manager's job (Anantatmula, 2010; Gehring, 2007). Furthermore, leadership is not a

common skill-set for many project managers who have transitioned from technical engineering positions to project management roles (Ong et al., 2009). As a result, the effects of positive and negative leadership have far reaching consequences.

According to project management researchers, positive leadership is related to 76% of successful projects (Zimmerer & Yasin, 1998). Thus, positive leadership has enormous potential to tip the scales in favor of project success. On the other hand, negative leadership is related to 67% of failed projects (Zimmerer & Yasin, 1998). It's evident that ignoring leadership development in the project management realm is taking a huge risk (Clarke, 2009; Fretty, 2006; Zimmerer & Yasin, 1998). In short, project leadership is a necessity for ensuring effective project management efforts that result in favorable project performance and successful project outcomes.

The Value of Soft-Skill Competency.

Project management encompasses a variety of tasks which are carried out by a group of imperfect people who report to a designated authority figure. This authority figure, the project manager, is responsible for both the project and the people (Toor & Arain, 2012). Project managers must be skilled and experienced with the hard-skills or the task side of project management. But they must also be competent with soft-skills which concern the social-psychological aspects of project leadership (Schiff, 2017; Cobb, 2006). At the end of the day, the project manager must manage both the project and the people supporting the project to succeed (Toor, 2009). In short, the project manager is both "production-centered and employee-centered" in his/her approach to leadership (Liu, Fellows & Fang, 2003, p. 819). This makes the project leader both a project manager and a people manager whether he/she likes it or not.

Project leadership is a people-related factor (Anantatmula, 2010). It's nearly impossible to manage or lead people using hard-skills or technical talent alone (Goleman, 1998a; Toor & Arain, 2012). "It is people who deliver successful projects using their knowledge and creativity, not through the mere use of techniques or hardware (Alam, Gale, Brown & Khan, 2010, p. 497). People management and project leadership requires soft-skills including personal skills, interpersonal skills, and group skills (Allen, Carpenter, Dydak & Harkins, 2016). Personal skills have to do with the individual and their thoughts, words, and behaviors in relation to the situations and workplace challenges they encounter. Self-awareness is an important personal skill that has been identified by researchers (Allen et al., 2016; Whetten & Cameron, 2015; Toor & Arain, 2012).

Self-aware leaders, including project managers, know who they are, what they value and where they're headed (Toor & Ofori, 2009; Bennis, 2009a). Over time, they grow accustomed to their individual strengths and weaknesses. As a result, they easily capitalize on their strengths and compensate for their weaknesses (Bennis, 2009a). These individuals are comfortable in their own skin and they are intimately familiar with what fuels their passion (Goleman, Boyatzis & McKee, 2002). These passions and convictions also drive their insatiable desire for knowledge.

Life experiences drive leader's self-awareness through learning what's important and why. As a result, these same individuals are goal-oriented, communicative, and cooperative as they focus on what lies ahead. The development of character is another result of self-awareness. Self-concept or the knowledge of one's self can hone the rough edges of personality thereby yielding stellar character. The authentic version of the

leader rises to the surface as character and freedom of self-expression ensue (Bennis, 2009a). Self-awareness is not just a personal skill, it is also an important emotional intelligence trait (Goleman, 1998b) and an authentic leadership trait (George, 2003; George, Sims, McLean & Mayer, 2007b). While personal skills are notable, interpersonal and group skills are just as important for project leaders who routinely work with and lead project teams.

The Significance of Teamwork.

Project managers are not alone in their quest for masterful project planning, successful project execution, and realization of technical objectives (Tabassi, Roufechaei, Bakar & Yusof, 2017). They lead a group of team members and followers in pursuit of project goals through the implementation of appropriate project strategy and methods. "A project team is the essential unit of success for any project because it performs the work to achieve project success" (Allen et al., 2016, p. 24). Given the constraints surrounding project objectives, a lone project manager is unable to effectively manage a project without the support of a skilled, supportive, and engaged project team (Anantatmula, 2010). Working well together was a key to success in yesterday's project setting, and that hasn't changed in today's contemporary project environment (Kouzes & Posner, 2002).

Teamwork matters because it promotes creativity, innovation, efficiency, motivation, and achievement (Adams, 2009). When everyone on the team is pulling in the same direction, reaching the goal becomes possible. Resonance, unity, and optimism promote a can-do attitude. It's been said that "many hands make light work." The realization of everyone pulling their own weight and performing their assigned tasks on

time is a happy, stress-free, energized, and coordinated effort. This reality is what every project manager hopes for, but the humanity of teams can keep this reality just out of reach (Lencioni, 2002).

Team members are human beings with unique personalities and habits. As such, the interaction between team members is unpredictable and not always positive. In fact, Lencioni (2002) discusses team dysfunction as being one of the biggest stumbling blocks for competing and succeeding in business. This truth is certainly applicable to project work.

To prevent dysfunctional team interactions, project managers can take the lead and promote positive behaviors and relationships. Modeling these behaviors is one way a project manager can relay the message but discussing these behaviors and expressing expectations surrounding these behaviors is also valuable. Millions of dollars are literally at stake and the timely completion of project work can directly affect a company's bottom line and longevity. With so much at stake, the project manager cannot afford to allow dissension and deception to permeate the project team. A foundation of trust is fundamental to any relationship, but it is especially important when project objectives are on the line.

The Presence of Trust.

Trust is the basis for effective project management because trust facilitates open discussion around project objectives, project risks, project failures and project successes. Unfortunately, project environments "present a high degree of randomness and uncertainty, which hinders the development of trust" (Brewer & Strahorn, 2012, p. 291). The overall development of trust among stakeholders is similar to the building of trust

between project team members. The fact that project teams are temporarily assigned to a project or work part-time on a project further complicates the process of building trust (Ng & Walker, 2008; Ong et al., 2009). Researchers agree that building trust is "an essential element of project work" (Brewer & Strahorn, 2012, p. 292) and that project leaders are key to establishing this foundation of trust (Northouse, 2016).

Project managers set the stage for trust by understanding team attitudes, personalities and behaviors. This understanding leads to a knowledge of both individual and team needs, strengths, values, commitments and cohesiveness (Edmonson, 2016). It's important for project leaders to be sincere and genuine in their efforts. Team members will appreciate the authentic efforts of the project manager and reciprocate. When individual team members come to understand their voices are being heard, they develop respect for one another and embrace the project's shared mission and purpose (Quinn & Thakor, 2018; Kouzes & Posner, 2002). Respect is a requisite to trust among team members.

Trust is rooted in the team's vulnerability and willingness to communicate openly (Lencioni, 2002). According to Lencioni, "trust is the confidence among team members that their peers' intentions are good, and that there is no reason to be protective or careful around the group" (2002, p. 195). The presence of trust can make all the difference as team members wrestle with project setbacks and seemingly insurmountable issues related to the complex project environment including disagreements on project tasks.

The Reality of Conflict.

Team members will not always see eye-to-eye. In fact, conflict may ensue over project issues that involve making good collective decisions (Edmonson, 2016). In these

instances, conflict can be a good thing because it encourages trusting team members to voice their concerns, share their ideas, and examine alternatives. On the surface, productive conflict may resemble interpersonal conflict because of the passion and emotion team members exhibit (Lencioni, 2002). However, productive conflict serves a positive end through yielding optimum solutions that are creative, timely, and clearly vetted by the team (Lencioni, 2002).

Project leaders who value such productivity should give permission for sharing ideas and openly discussing the pros and cons of specific choices (Edmonson, 2016). Upon closer examination, productive conflict is characterized with honesty, openness, consistency, and respect (Northouse, 2016). Under these conditions, conflict is just another rung on the ladder of teamwork. The project manager's role is "to enable diverse team members to grasp one another's perspectives and productively share their insights" (Edmonson, 2016, p. 54). Imagine the project manager as the one holding the ladder in place; the project manager encourages his/her team to ascend the ladder using proven trust, productive conflict, positive communication, and powerful collaboration.

Project managers can benefit from productive conflict, especially when abnormal project conditions develop, and standard solutions are unavailable or ineffective. Direct engagement with team members may yield creative solutions, but those solutions should be thoroughly vetted by the team to ensure everyone has an opportunity to speak their mind. Open and healthy debate over different courses of action can prevent unhealthy side-bar arguments between individual team members (Lencioni, 2002). Project managers need to recognize the difference between productive conflict and interpersonal conflict. Productive conflict should be encouraged while interpersonal conflict should be

resolved (Kouzes & Posner, 2002). Experienced project managers and team leaders can also model productive conflict by questioning groupthink and participating in healthy debate (Lencioni, 2002). Project teams who effectively communicate and collaborate set the stage for productive conflict and reap the benefits of creativity and innovation. Project managers can help in this regard by encouraging positive communication and powerful collaboration.

The Call for Communication and Collaboration.

Project management leadership is concerned with communicating and collaborating with a group of followers as they pursue common goals. Effective communication and collaboration between these groups are recognized as critical factors in successful project management (Dubois et al., 2015; Alam et al., 2010; Ong et al., 2009). Research by the Project Management Institute showed that "the use of effective communication methods resulted in 80% project success rate, with regard to delivering the project on time, within budget, and meeting the initial goals" (Dubois et al., 2015, p. 41). Some researchers estimate that managers spend nearly 75% of their time communicating with stakeholders including subordinates (Anca, 2015). This is not surprising since 67% of managers believe communication is the key to positive relationships between leaders and followers (Anca, 2015). Positive relationships are built around the functional interactions of individuals.

Communication is an interactive process and a common one for project managers. The passing or sharing of information is a primary purpose of communication. Imagine two persons passing a football back-and-forth; such an image is a picture of successful communication with the ball being symbolic of the information shared. The moment the

ball is fumbled is the moment miscommunication begins. Weak relationships result in a failure to communicate which leads to shallow decision making, bad choices, and selfish agendas. However, constructive dialogue encompasses the social aspect of communication as well as the sharing of information (Ziek & Anderson, 2015).

The sharing of information between leaders and followers allows for good decision making. Furthermore, the sharing of accurate information within a relational setting is efficient, and collaboration ensues. For this reason, project leaders should encourage team members to share their thought process (Edmonson, 2016). Using the football analogy, the passer tells the receiver that he/she's thinking about throwing the ball fast and to the right with a tight spiral. Now that the receiver knows the passer's thoughts, he/she can adjust their expectations, so the ball can be caught and not fumbled; this is a picture of collaboration.

Collaboration is the coming together of individuals to accomplish a shared mission. This meeting of the minds is a cooperative and communicative interaction that should be supported by leaders. According to Kouzes & Posner (2002), leaders should: 1) Create a climate of trust, 2) Facilitate positive interdependence, and 3) Support face-to-face interactions (p. 243). Furthermore, empowerment and participation in decision making is promoted through the leader's interaction with the team.

Dynamic environments are especially prone to miscommunication or poor interaction between project leaders and team members. Some researchers suggest having more informal interaction with team members when the environment is unstable, uncertain, and complex (Collyer, 2016). Another important factor is the timeliness associated with communication (Collyer, 2016).

Since project environments encompass change, the timely sharing of accurate and relevant information is a precursor to good project management (Ziek & Anderson, 2015). Positive interaction and collaboration can also benefit from strategic seating assignments. In other words, the placement of team members relative to one another can impact the speed and quality of communication and collaboration (Collyer, 2016). This is especially the case with project managers and team members who are working toward a common goal. Project teams who are committed to the project mission appreciate effective communication and recognize the positive results that are achieved when all perspectives are taken into consideration. Project managers should communicate the importance of commitment and alignment around the project's mission.

The Need for Commitment.

Commitment to and alignment with the project's mission is another key factor that can impact project performance in the long term (Lymore, 2002). "One of the principal tasks that a project management leader needs to effectively perform is ensuring alignment of goals and resultant commitment to project goals" (Christenson & Walker, 2004, p. 40). Project managers should strive to encourage individual team member commitment to the project's mission since project outcomes are so dependent on teamwork. Confusion and doubt are two of the things that can lessen a team members commitment to the project and the project team (Lencioni, 2002).

Project managers can combat confusion and doubt by focusing on team ideology. Team ideology encompasses team norms, roles, and goals (Cobb, 2006). Project managers who bring clarity to the roles, goals, and norms of team members are laying the groundwork for substantial buy-in and commitment. Team members and stakeholders

will often ask "what's in it for me?" (Nayak, 2016; Studer, 2009). The project manager who correctly answers this question is the one who connects the individual to the project's objective(s). Making this connection can be accomplished by answering a different question, "why should I"? There are several reasons a team member should commit to the project team and project objectives.

Studer (2009) proposes several leverage points for securing commitment from team members and stakeholders. These include: 1) Values, 2) Skill, 3) Recognition, 4) Consequences, and 5) Money (p. 240). Individuals have personal needs and values; aligning their needs and values with those of the project ensures alignment around purpose and mission (Quinn & Thakor, 2018). A respected project leader demonstrates commitment to the team through action. "Being on-board is about action. It is about relentlessness in achieving desired results. It is about role-modeling the standards of behavior agreed upon" (Studer, p. 192). Teams that commit to the project bring enhanced clarity to important tasks and rally behind common objectives (Lencioni, 2002). Teams that commit to the project learn from past mistakes and take advantage of good timing and other favorable conditions (Lencioni, 2002). Teams that value commitment actively progress the project by overcoming obstacles and changing direction as necessary (Lencioni, 2002). Project managers who encourage their teams to fully commit to the project can realize project success that benefits the entire organization. The project manager can promote this alignment with the project's mission through their own credibility of character.

The Credibility of Character.

A projects manager's character is the one thing that remains the same from one project to the next. Project management is concerned with managing change; project managers must recognize and react to opportunities and risks as change ensues. Nevertheless, project managers must be consistent and credible each step of the way, unwavering in their commitment to promoting a positive project culture. They must be trustworthy and transparent with stakeholders and project teams in order to effectively lead (Ong et al., 2009). These qualities enable strong relationships to develop between the project leader and the individual team members. These relationships revolve around the project leader's core-values which inherently become adopted by the team and viewed as shared values (Moylan & Walker, 2012).

Values-based leadership can unite team members and stakeholders in enthusiastic and creative support of the project's vision (Moylan & Walker, 2012). When the values and vision of the group are aligned, there is no wasted effort. Credible project leaders consistently "lead by example and trust rather than command and fear, coupled with the unbridled moral courage, constant respect and desire to serve others" (Moylan & Walker, 2012, p. 4). The leader's values become apparent over time as team members witness consistent behavior that is intrinsically motivated (Hackett & Wang, 2012).

Character traits are virtues exhibited through values-based leadership. The virtues espoused by project leaders create a launching pad for action that is unrelated to feelings, skills, capabilities and competency (Hackett & Wang, 2012). The result of credible leadership is a team of devoted followers who are self-directed, loyal to the mission, and high performing (Moylan & Walker, 2012). The project leader's positional power is not

the cause of this devotion, rather referent power stemming from the project leader's character and credibility with the group (Liu & Fang, 2006). The project manager becomes a source of stability and strength to the project team. An optimistic and transparent demonstration of wit and confidence further empowers the project team to act.

The Emphasis on Accountability.

Project management is all about action. Both project planning and project implementation are active project phases that require a course of action. Project managers don't have the luxury of stuntmen. They must get comfortable with uncomfortable situations. Project schedules are lean, so there is no time to sit on the sidelines waiting for someone else to act. Project management must be characterized by forward motion in the right direction (Echenbach, 2013). Competency and good intentions are not enough to ensure that right decisions are being made, and proper actions are being taken. It takes accountability to hold the plan together (Studer, 2009) and ensure corrective actions are being taken (Lencioni, 2002). Without accountability, mistakes are made and continue to be made. Without accountability, misuse of resources occurs, and missed deadlines become a reality. Project management errors must be recognized and corrected to avoid project failure.

Accountability is an important attribute of project teams because it allows team members to learn from their past mistakes (Kouzes & Posner, 2002). According to Lencioni, accountability "refers specifically to the willingness of team members to call their peers on performance or behaviors that might hurt the team" (2002, p. 212). When

team members are aligned and active, accountability is just another step forward. Project managers can encourage this step by engaging with team members.

This engagement with team members can foster accountability on projects using different strategies. Berkley (2007) offers the following four strategies: 1) Welcome it. A defensive attitude leaves no room for receiving feedback from others. A team member that's aligned and active will maintain an open ear and listen. Transparency and a good dose of humility always helps when receiving constructive feedback from a respected team member. 2) Model it. Respect and goodwill should always be present when sharing feedback and calling peers on deficient performance. A willingness to share difficult truths is something that will pay huge dividends later. Furthermore, it demonstrates to others how they can effectively hold one another accountable. 3) Use opportunities to teach about accountability. During periods of confrontation, it can be advantageous to revisit team member roles and responsibilities within the context of project objectives. Reacquainting team members with what is being done and why it's being done can help reorient team members and maintain alignment and action with renewed vigor. 4) Never question people's motives. Accusatory language and posture can poison the environment by eroding the team's foundation of trust. Subtle approaches to understanding one's motives is a more thoughtful course of action that project managers can demonstrate when appropriate. A good approach is to treat other members of the team the way you'd want them to treat you as far as accountability is concerned. These four strategies provide a road-map to greater accountability which is necessary for effectively making decisions.

The Importance of Decision Making.

The project management profession demands prompt and proper decision making throughout the process (Loch et al., 2017). "The ability to manage, and to lead, can be significantly improved with high quality decisions in all managerial responsibilities because decisions are the foundation for action" (Rausch, 2003, p. 979). Regarding project success factors, time is of the essence because time is literally money to those who champion and lead projects.

If a project is moving too slow in the field due to unforeseen circumstances, then additional resources may be required. Instead of ten people constructing a project over a 5-day period, the project manager may decide to assign fifteen people to the project which is 5 additional persons on the pay roll. The budget may not have contingency to pay for these additional man-hours. However, the project manager knows the project champion will approve this decision because getting the project completed on time will result in establishing more contracts than the competition. The additional money required for the two-hundred man-hours pales in comparison to the profits associated with landing these valuable contracts. This example illustrates how project managers make important decisions routinely based on the information available; sufficient knowledge is the key to confident decision-making (Loch et al., 2017).

The ability to make effective decisions in times of uncertainty is even more important because information may be limited (Rapp, 2004). This limited information does not change the amount of time available in a day. Therefore, the project manager must be accustomed to inferring information based upon input from other sources including but not limited to the project team and stakeholders. Decision making can be

influenced by the project managers observational and intellectual abilities "and willingness to learn from their experiences" (Rapp, 2004, p. 17). In other words, the right decisions flow from an informed mind. The best project managers are those who possess a systematic and innovative approach to thinking (Lymore, 2002).

Decisions can be made by the project manager independently of the project team. Conversely, the project team can be empowered to make decisions and determine its own direction (Newton, 2009). The delegation of decision authority to team members can be a positive move as it empowers and motivates team members while allowing the project leader to focus on other matters. Ultimately, the project leader retains his/her authority for evaluative and veto power over the final decision (Cleland & King, 1997). Of course, the project manager must decide who to empower based on the situation at hand (Lymore, 2002).

Slevin, as cited by Cleland and King (1997), noted two important questions that leaders, including project leaders, should ask when making important decisions: 1) Where or from whom do I get the information? 2) Who should be included and who is making the decision? In brief, information input can come from the project team, originate with the project manager, or both. Similarly, decision authority can lie with the project manager, the project team, or anywhere in between depending on the circumstances. The answer to these questions determines whether the project manager has a participative management style. It's important for the project manager to match his/her style to the expectations and personality of the project team (Slevin, 1985; Slevin 1997). Researchers argue that subordinate participation in decision making has the

potential to improve morale, innovation, and individual performance (Edmonson, 2016; Krog & Govender, 2015; Ivancevich, 1979).

Good decision-making flows from an assimilation and presentation of the facts. The compressed schedules and limited funds associated with project management demand good decisions quick. Unfortunately, speed can be the down-fall of a project manager and the demise of a project if the facts and context are not thoroughly considered. One solution is to prepare for the unexpected at the beginning of the project, so that good decisions can be made quickly if the unexpected occurs. "The uncertainty inherent in a difficult project ideally needs to be accounted for from the beginning" (Loch et al., 2017, p. 54).

Ultimately, decisions flow from decisions. In other words, the decision to create a contingency plan to manage risk during the planning phase is something that will affect decisions being made during the implementation phase. Similarly, decisions concerning the empowerment of team members will have consequences on subsequent decisions that impact project strategy and performance. These subsequent decisions must consider the project manager's vision for the project.

The Power of Vision.

Project management leadership is concerned with creating and fostering vision on behalf of the organization or project champion. Project managers know that tomorrow's victory is based on today's vision (Tamkin, 2012). The project vision can connect individual contributors and stakeholders to the project outcome by clarifying the direction in which to proceed (Christenson & Walker, 2004). According to Christenson and Walker, the creation and communication of vision to a project team is a major factor in

determining the success of a project (2004). Project managers are responsible for the performance of their projects, and their ability to create and communicate the project vision to their project team is of paramount importance (Hebert, 2002). Furthermore, effective project leaders nurture the project vision which can inspire the project team to accomplish the impossible (Shenhar, 2004).

By nature, project managers are visionary as they are charged with planning and implementing a project or solution that satisfies a business need. Some of the best project managers have a long-term vision for the project and a big-picture perspective that includes all the potential stakeholders (Lymore, 2002). Oftentimes, project managers are working toward a goal that is not clearly defined (Edmonson, 2016). Creating a project vision instills clarity and a sense of purpose in these situations. Team performance is proportional to the leader's ability to clarify and communicate a project's purpose (Tabassi, Roufechaei, Bakar & Yusof, 2017). "Team members are more likely to work harder on a project when they are able to see a vision conveyed by the customer and feel integral to the project cycle" (Craig, A., 2018, p. 25). These team members buy in to the vision when they believe it has current and future relevance (Schultz, 2013). Passionate project managers capable of delivering a consistent message are most effective at casting vision for the team.

The most effective project managers are visionary leaders who possess the power to motivate others while maintaining their integrity (Bennis, 2009b). This power comes from a consistent flow of ideas; not position (Bennis, 2009b). These ideas become glimpses of what the future can be (Quinn & Thakor, 2018; Schultz, 2013). Project managers rely on their experiences and use their creativity to craft a meaningful vision.

Christensen and Walker refer to this as “the soul of the project” which “anchors project participants through their core values to a project outcome that all can relate to” (2004, p. 41). Shenhar (2004) uses the term “project spirit” to label the project teams connection to the project mission.

Project managers are role models and their passion for the vision they create can be contagious under the right conditions. Project managers have a picture of the future in their minds, and they align and inspire stakeholders according to that picture (Schultz, 2013). In one sense, project managers become marketing representatives as they sell their vision to the stakeholder group (Christenson & Walker, 2008). Their mission is to garner the support of the stakeholder group by developing, communicating, and maintaining the project vision (Christenson & Walker, 2004).

Vision is embraced by team members when the purpose of their mission is made clear. Passion, integrity, consistency, focus and determination are all characteristics of authentic leadership that help project leaders create and foster vision among their team members and other project stakeholders.

The Focus on Results.

Project managers are tasked with managing projects, and project management is about delivery of results. Without results, the project is static, and that is an unacceptable position. Projects must progress; they must move forward and accomplish the change (Ong et al., 2009). In his speech, Keep Moving from This Mountain, Martin Luther King Jr. said, “We must keep moving; if you can’t fly, run; if you can’t run, walk; if you can’t walk, crawl; but by all means keep moving” (1960, p. 419). Progress is no exception when it comes to project management. Project teams must be focused on results to

ensure progress is happening. If one member of the team is focused on something other than the project's mission, performance suffers. That member is singing off key, and harmony suffers a set-back in the form of diminished performance. Concerned project leaders must quickly identify the individual(s) who are out of alignment and reestablish order and direction.

Individual team members may have a unique role, but world class teams achieve group goals because "they all play their individual parts" (Kouzes & Posner, 2002, p. 253). For example, an important project deadline is quickly approaching, and everyone is working in high gear to do their part. A single team member decides the deadline is not as important as their upcoming inspection certification exam. They take an extended lunch each day to study for their exam and half-heartedly perform their work assignment the rest of the day. They pass their exam that Friday but miss their deadline for drafting the vendors purchase agreement. The project manager is disappointed in the missed deadline and must communicate the bad news to the client. This is a common scenario that plays out every week in organizations throughout the country. Project leaders can avoid this situation by intervening beforehand and communicating the importance of maintaining focus on individual project tasks.

Distractions can cause team members to take their eyes off what matters. The object of distraction may be individual status or just plain old apathy. According to Lencioni (2002) individual status has a lot to do with self-preservation, self-promotion, and self-aggrandizement. This enhancing of the self at the expense of the team can erode trust and result in resentment. A team environment without focus may appear busy on the surface; but the lack of progress and inattention to results is difficult to miss. The

project leader must step in when distractions blur progress and protect the project mission.

Protecting the project's mission involves maintaining focus on results (Lymore, 2002). Results lead to positive outcomes, and positive outcomes achieve goals and solve problems (Rausch, 2003). Successful project management is dependent on the efforts of others (Tamkin, 2012). Getting others to focus on results can be a challenge. Lencioni (2002) suggests making results a central element of teamwork. This centrality includes publicly declaring goals and connecting rewards to goals (Lencioni, 2002). Teams will unify and work with a passion to achieve results that are connected to project goals under such conditions. Another strategy for addressing individual lack of focus is to establish weighted goals that are designed to maintain individual focus (Studer, 2009). "An unrelenting focus on specific objectives and clearly defined outcomes is a requirement for any team that judges itself on performance" (Lencioni, 2002, p. 216). While successful project managers understand the importance of maintaining focus, their ability to motivate and influence a project team in pursuit of excellence is unarguable.

The Knack for Motivation and Influence.

Project leadership is concerned with influencing and motivating a group of team members and constituents toward a successful project outcome. Project motivation knack (PMK) is the "ability to persuade others to enthusiastically and diligently pursue project objectives" (Preston, Moon, Simon Allen & Kossi, 2015, p. 16). Successful project leaders who possess PMK can drive team members to deliver superior execution and optimum performance (Preston et al., 2015). "Thinking positively, resolving conflicts, understanding relationships – in short, skillfully connecting with others – is especially

powerful in maximizing the potential of teams" (Goleman, 1998b, p. 24). Clearly, PMK is related to an individual's personal experience, values, intellect, personality, leadership style, and emotional intelligence (Gardner & Stough, 2002).

During the planning phase of a project, a project manager may apply his/her PMK using inspirational methods that rally the project team around a shared project vision (Allen et al, 2016). Emotional connectedness coupled with project enthusiasm may serve as a foundation to the project team embarking on a new project mission (Goleman, 2014; Ingram & Cangemi, 2012). "Being passionate about something is what motivates us to pursue it. No emotions, no activity" (Ingram & Cangemi, 2012, p. 3). A project leader who is passionate, confident, and optimistic has the potential to infuse the project team with the same level of passion and optimism.

Visionary leadership is important because unity and alignment around a shared vision create synergies among team members that result in progress (Preston et al., 2015). At this point, the visionary project leader must translate the project vision into something the project team can relate to personally. "Give people coaching, clear expectations, and positive work assignments" (Goleman, 1998a, p. 26). In this phase of the project, the project manager guides the project team by elevating their perspectives with respect to how they might contribute to the project vision (Goleman et al., 2002). Removing the proverbial blindfold gives project team members clarity surrounding expectations and opportunities connected to the project objective(s). This empowerment and flexibility require coaching from the project leader.

Coaching is a leadership activity that flows from a leader's PMK. In other words, coaching is a perfect venue for project managers to motivate project team members and

inspire excellence in their pursuit of project objectives. Coaching or mentoring is most effective when project managers and team members enjoy a positive interpersonal relationship (Preston et al., 2015). These relationships are founded on trust and respect (Kouzes & Posner, 2002). Coaching may include correcting deficiencies in behavior as well as recognizing positive contributions toward a project task (Northouse, 2016). Coaching sessions, human moments, are not about criticism; they are about collaboration and understanding (Kouzes & Posner, 2002). The benefits of coaching include alignment of perspectives, reorientation of focus, passion and commitment to the project mission, and progress "toward an emotionally intelligent, resonant, and more effective group" (Goleman et al., 2002, p. 173).

During the implementation phase of a project, a project manager may continue to coach and mentor team members. While the project manager is focused on project objectives and physical tasks, he/she must continue to motivate the project team and support their efforts. Project management is a mix of technical "know-how" and people management. New project managers may be limited by their interpersonal ineptitude; they tend to focus on the technical aspects and forget to manage the project team (Kouzes & Posner, 2002). However, seasoned project managers understand the need to manage people using motivational skills including emotional intelligence.

Experienced project managers know how to motivate, when to motivate, and how often to motivate. "Influence can be important, but it is what is achieved through the exercising of that influence that is of more genuine significance" (Newton, 2009, p. 128). Like a doctor, the project manager can provide treatment (motivation) to those most in need by recognizing the symptoms of the project team and knowing the pulse of the

overall project. Before a project leader can motivate team members at the individual level, he/she must develop an understanding of what others are feeling or experiencing (Batool, 2013). Emotional intelligence is an important competency that influences a leader's PMK as they minister to the needs of the project team.

PMK includes recognizing the contributions of team members and showing appreciation for their contributions toward and commitment to the project mission. People need to be appreciated; an unspoken longing for affirmation persists inside the committed team member (George J., 2000). The observant project manager can pick up on this invisible longing and fill in the void (Ingram & Cangemi, 2012). A heartfelt handshake and a verbal "thank you for all you do" can motivate a team member to go above and beyond their current level of effort as they continue down the path of progress.

Project managers must wear the mantle of project motivator to experience consistent project success. The PMK that a project manager deploys in the project environment is merely a seed. The resultant fruit is a high performing project team that is self-sustaining; real motivation comes from within. (Ingram & Cangemi, 2012). External motivation may work in the near term, but it is not self-sustaining. For example, project leaders who motivate through fear may see results in the short term. However, consistency and longevity are lacking (Northouse, 2016). Short-term motivators may take other forms.

Contingent rewards such as money may motivate followers in the short term, but long-term commitment and passion are lacking (Northouse, 2016). "The positive environment created by the leader is more important than monetary compensation" (Ingram & Cangemi, 2012, p. 3). Positive motivation is collaborative and mutually

beneficial to the individual project team member and the project mission. The effective project manager is more than a motivator; he/she is a technically astute leader who possesses the hard-skills necessary to negotiate the twists and turns of the project environment.

The Value of Hard-Skill Competency.

Project management leadership encompasses both soft-skills and hard-skills. The soft-skills are those that have to do with human social interactions (Alam et al., 2009), while the hard-skills have to do with intellectual competencies such as administration and problem solving (Geoghegan & Dulewicz, 2008). Some unique hard-skills are surfacing frequently in today's complex and dynamic project environments. As project environments change, the project manager must quickly adapt and bring his/her project team into alignment.

The complexity and uncertainty of contemporary project environments demand flexibility from the project manager as issues arise. In these harsh environments, traditional practices and procedures are perhaps no longer sufficient (Aubry & Liebre, 2010). It is important for a project leader to be adaptable as this enables him/her to react favorably to changing circumstances. It is also important for a project leader to be agile in today's world. This agility refers to a move from prescriptive practice to improvisational practice because of turbulent organizational environments (Leybourne, 2009). Agility softens the reactive side of project management while emphasizing proactive considerations that are mapped out in advance (Jones, 2017b). At the same time, it's important for the project manager to match project tasks with the appropriate skills and approach.

A special attunement between the project leader's temporal skills and the nature of the tasks they are engaged with on the job must exist (Thomas & Pinto, 1999). In other words, the project manager must be able to match the required skill to the appropriate situation and switch back and forth as necessary to accomplish the respective task(s). The project manager must select the right tool for the job like a swiss army knife. Project managers who can read the environment and change from a prescriptive approach to an adaptive approach are more likely to succeed compared to those who cling to the same old methods.

According to Craig (2007), some of the best project managers are flexible in how they manage projects and lead project teams. "They tend to be those who adapt to the set of players and circumstances for each job while being true to themselves and their basic personalities and make adjustments on the fly for that day on that job to get the job done" (Craig, 2007, p. 60). Once again, evidence of authentic leadership is detected in Craig's description. Being true to oneself is a fundamental characteristic and requirement of authentic leadership. Authenticity is a rare commodity in a world characterized by affectation.

The Authenticity of Leadership.

Authenticity is a powerful leadership trait that shines a bright light in the shadowy corners of the project environment. Rarity and originality are what make authenticity of anything so valuable. Indeed, authentic leadership is rare and valuable as near-sighted leaders aspire to emulate popular but short-lived models of the past (George, 2005). Authentic leadership is a root construct or common denominator for other positive leadership styles including but not limited to transformational leadership, servant

leadership, and charismatic leadership (Avolio & Gardner, 2005). The authentic leadership style is one that can be adapted to almost any leadership role including the project manager. The following definition captures the most important characteristics of authentic leadership:

> We define authentic leadership as a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development. (Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008, p. 94)

The basic tenets of authentic leadership include: 1) Self-awareness, 2) Internalized moral perspective, 3) Balanced processing of information, and 4) Relational transparency. These four tenets function like four legs on a chair; the project leader should be comfortably seated in the "chair of authenticity." A deficiency in one leg causes authenticity to be unstable and off-balance. For instance, a lack of relational transparency will eventually erode the foundation of trust and credibility between a leader and the follower group. This leads to a breakdown in communication and results in negative consequences for the organization; a three-legged chair is not a comfortable or safe place to sit.

Leadership falls short when authenticity is compromised. The effective project manager is careful to maintain an authentic style of leadership in an environment characterized by uncertainty (Andersen, Birchall, Jessen & Money, 2006). Project management is invariably concerned with change management as products or objectives

grow and mature; the environment changes as project stages come and go. The one object or person that brings stability and meaning into this dynamic environment is the self-aware project manager.

Self-awareness is both an authentic leadership trait and an emotional intelligence competency. Self-awareness is the ability to look deep within one's self and take inventory of the heart. Self-aware leaders are willing to change, adapt, and be genuine in their service to others (Metcalf, 2014). The Bible brings self-awareness to the forefront in the teaching of Jesus:

> Why do you look at the speck of sawdust in your brother's eye and pay no attention to the plank in your own eye? How can you say to your brother, 'Let me take the speck out of your eye,' when all the time there is a plank in your own eye? You hypocrite. First take the plank out of your own eye, and then you will see clearly to remove the speck from your brother's eye. (Matthew 7:3-5, NIV)

Before a leader can lead others, he/she must first know themselves and prepare for the challenge of leading others (Allen et al., 2016). Bennis refers to this as discovering one's distinctive voice (2009).

Voice encompasses many things including purpose, passion, personality, motivations, emotions, strengths, shortcomings, dreams, and aspirations (Toor & Ofori, 2009). When leaders discover their voice, they can lead from their own convictions (Masarech, 2001). "For individuals to reach their peak and achieve success in their lives, they must first stop and determine what they want to do, like to do, or are compelled to do because of something burning inside of them" (Lymore, 2002, p. 72). The passion, the drive to achieve, flows from within and is expressed through the act or service of

leadership (Toor & Ofori, 2009; Masarech, 2001). For project managers, this entails alignment with the project mission, building credibility with stakeholders, making a difference, and leading by example.

Internalized moral perspective is what George refers to as the individual leader's "true north" (George, 2005; George & Sims, 2007a). A moral compass resides inside the leader and directs his/her actions and decisions. The compass is a compilation of lessons learned, values embraced, and character formed over an extended period of time (George, 2005; George & Sims, 2007a). Values are those principles or standards of behavior that characterize an individual's life. The origins of such values vary, but adherence to and demonstration of these values is a top priority to the authentic leader (Northouse, 2016). Authentic leaders are keenly aware of their values, and they don't compromise even in the most demanding situations; they remain true to these values no matter what.

This internalized moral perspective refers to a leader's self-regulation when faced with external pressure and influence to conform in a certain manner (Northouse, 2016). Project managers are especially under pressure to perform well throughout a project's life-cycle. "Little by little, step-by-step, the pressures to succeed can pull us away from our core values" (George, 2005, p. 3). Temptations to take shortcuts or compromise on quality can undermine a project manager's credibility thereby weakening one of the legs on the chair of authenticity. However, the authentic project manager resists such temptation and remains principled despite the stressful circumstances.

Project managers who possess values and demonstrate those values throughout the project management process are respected and supported by their project teams (Walker & Moylan, 2014). Project managers who fully comprehend and demonstrate

their values and beliefs build credibility among stakeholders and colleagues (Kouzes & Posner, 2002). Furthermore, project managers who maintain alignment between their personal values and the core values of the organization are effective in establishing shared values among team members. Shared values and principled leadership result in purpose and create meaningful team work (Quinn & Thakor, 2018; Walker & Moylan, 2014). The ethical framework of the workplace is often dependent on these shared values.

The project manager who serves under the authority of the organization must demonstrate a commitment to the company's ethical framework. An unspoken code of conduct emanates from within the project manager as he/she interacts with stakeholders and team members. The values and principles that are near and dear to the project manager are reflected by those on the project team. Values and principles are virtually unlimited, but some of the most common values espoused by leaders including project managers are: 1) Honesty and integrity, 2) Enthusiasm and optimism, 3) Innovation and creativity, 4) Temperament and consistency, 5) Courage and confidence, 6) Humility and meekness, 7) Trustworthiness and transparency, 8) Fortitude and strength, 9) Prudence and wisdom, 10) Justice and fairness (Bastons, 2008; Brewer & Strahorn, 2012).

It's important for project managers to express their values and clarify those values to those on the project team. Kouzes and Posner encourage the leader to explore their inner territory often as a precursor to such expression (2002). This inner territory is where the true north resides; it is what defines who a person is, the path they're on, and how they distinguish right from wrong (Northouse, 2016). "Values based leadership skills, values, and concepts are highly applicable to the processes of project management,

in particular, in the leading of programs from concept through completion" (Walker & Moylan, 2014, p. 1117). The authentic project manager understands what makes him/her tick and their actions as an agent of change are influenced by this understanding.

Balanced processing of information is another important aspect of authentic leadership that is directly applicable to project management. Balanced processing means that a project manager takes all the facts into consideration before making a decision (Özkan & Ceylan, 2012). It includes soliciting multiple perspectives or opinions from members of the project team or stakeholders (Northouse, 2016).

Balanced processing is a self-regulatory behavior, because it recognizes the potential for bias but places it outside the ring by inviting multiple constituents to participate in the decision-making process. This invitation "provides a powerful platform for open dialogue about complex issues" (Metcalf, 2014, p. 10). One outcome of balanced processing is a high likelihood of making the right decision(s) using objective reasoning (Northouse, 2016). Another outcome of balanced processing is the development of collective efficacy as team members sense their opinions and viewpoints matter (Özkan & Ceylan, 2012). Lastly, connecting with the project team in this manner builds enduring commitment, not just momentary compliance (Masarech, 2001).

Relational transparency is the final tenet of authentic leadership. Project leaders should strive to maintain healthy relationships with team members and stakeholders through honest discourse and interactions. Healthy relationships are based on honesty and good will. The authentic leader must consistently present his/her authentic self to team members; a distorted presentation of one's self can negatively impact healthy relationships with others (Walumbwa et al., 2008).

Relational transparency is a self-regulatory process that "promotes trust through disclosures that involve openly sharing information and expressions of one's true thoughts and feelings while trying to minimize displays of inappropriate emotions" (Walumbwa et al., 2008). The authentic project manager must put his/her best foot forward as they collaborate with the project team. Authentic leadership works best in the context of authentic relationships (Goffee & Jones, 2009). A disingenuous leader can burn bridges and destroy networks of relationships in one bad interaction (Goleman et al., 2002). However, a sincere and authentic leader is transparent, vulnerable, empathetic, and inspirational to the follower group (Craig A., 2018; George, 2005).

Project leadership is a key factor in project management. Exceptional leadership requires authenticity, community, collaboration, and passion (Goffee & Jones, 2009). Successful project managers understand the value of authenticity as they lead project teams toward the finish line. They recognize teamwork as an essential component in managing successful projects (Adams, 2009). Project leaders are passionate and demonstrate commitment to organizational goals as well as their core values (George, 2005). Elements of adaptive leadership are also evident as project leaders intervene and coach individual team members when issues arise. Both authentic leadership and adaptive leadership recognize the importance of teamwork in achieving project goals and project success. While project life-cycles may be characterized with ups and downs that can frustrate and discourage stakeholders and team members, authentic project managers encourage their constituents with genuine optimism and perseverance.

The following leadership model depicts the competencies and concerns of project leaders as leverage points within the project environment.

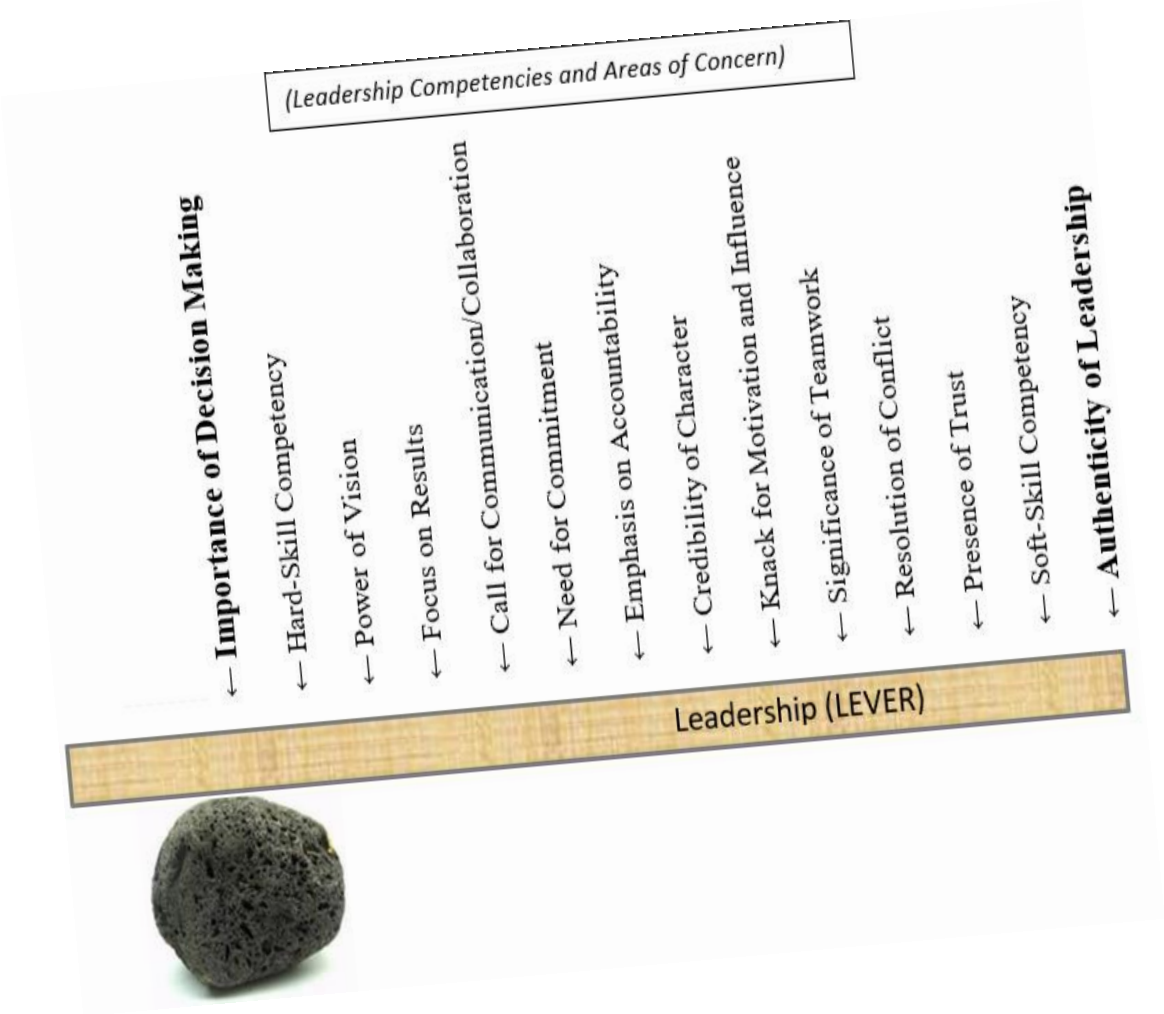


Figure 6: Project Leadership Advantage - Leverage Model

The model depicts leadership as a lever and followership as a fulcrum. "By definition, if there is a leader, there must be a minimum of one follower; the normal direction of influence (motivation) is assumed to be from leader to follower … However, it is important to recognize the existence of reciprocal dependency in a superior-subordinate relationship – neither can exist without the other" (Liu et al., 2006, p.820). A lone lever is useless without a fulcrum, so a leader is useless without a follower. Maximizing leadership is analogous to maximizing leverage through various leadership competencies and concerns.

A project manager who addresses the concerns and embraces the competencies mentioned in this section should be able to maximize his/her impact on the project from a leadership leverage perspective. "The most powerful form of leadership responds to the most pressing problems" (Newton, 2009, p. 129). The complexity and uncertainty of project environments can lead to chaos and problems (Axson, 2010). Project management is concerned with establishing order/clarity and proposing solutions. Project leadership is an important impact factor when it comes to deploying appropriate project strategies and ensuring excellent performance. Emotional intelligence is an important aspect of project leadership that is essential for functioning in a rapidly changing environment.

Concept 3: Emotional Intelligence and Project Management

Project management is a fast-paced, results-driven profession that is concerned with change management (Griffith-Cooper & King, 2007). The nuts-and-bolts mentality that pushes a project from the drafting board into the field doesn't leave much room for emotion and sensitivity. However, it is this researcher's opinion that project managers lacking emotion and sensitivity have a tough time meeting important project criteria and technical objectives. "Emotions exist for a reason and individuals can become victims of them or use them to their advantage" (Ingram & Cangemi, 2012, p. 3). The quality of emotional labor and the frequency of emotional expression from the project manager can have positive or negative impacts on project management (Chopra & Kanji, 2010; Ashkanasy & Dasborough, 2003). The capacity for recognizing and regulating emotion in one's self and others is called emotional intelligence (Boyatzis, Rochford & Cavanagh, 2017).

The term emotional intelligence is somewhat of a paradox because emotions are generally thought of as subjective while intelligence is thought of as objective (Chopra & Kanji, 2010). This combination of *feeling* and *thinking* is not as much of a paradox as it sounds. The emotional side of the brain is interconnected to the logical side of the brain (Chopra & Kanji, 2010). This means that an individual cannot make a logical decision without having some sort of emotion related to that decision (Dearborn, 2002). In other words, individuals will always be 'feeling about thinking' and 'thinking about feeling' (Chopra & Kanji, 2010, p. 972). Thus, the term emotional intelligence (EI) or emotional and social intelligence (ESI) has been accepted by researchers as a valid and accurate term.

According to Salovey and Mayer, emotional intelligence is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (1990, p. 189). Some view emotional intelligence as "a set of behavioral competencies that can be developed" (Boyatzis, Rochford & Cavanagh, 2017, p. 72). Some view emotional intelligence as an innate personal trait (Bar-On & Parker, 2000), while others view emotional intelligence as a competency that can be acquired and developed (Goleman, 1998b). Based on these views, emotional intelligence can be perceived as an ability, a behavior, a competency, or a trait. Whatever it is, emotional intelligence is special, and it makes a difference in the project environment (Zhang & Fan, 2013, Trejo, 2016).

Emotional intelligence is a special soft-skill that successful project managers and project teams demonstrate on a regular basis. Large projects with complex objectives can place emotional demands on both the project manager and project team (Edmonson, 2016). Such demands stem from "complexity of personnel, multiplicity of goals,

intensive of capital, strong uncertainty of activities, difficulty in coordinating stakeholders, etc." (Zhang & Fan, 2013, p. 195). Furthermore, research has shown that "high-performing members of project teams were more likely to display enhanced levels of listening and coaching behaviors as well as having the ESI to facilitate openness and emotional expression with those they worked alongside" (Boyatzis, Rochford & Cavanagh, 2017, p. 71). Project managers concerned with improving project performance and project success can improve the project culture through understanding and demonstrating the relevant components of emotional intelligence (Trejo, 2016; Zhang & Fan, 2013).

Author and psychologist, Daniel Goleman is considered the world's leading expert on emotional and social intelligence (Goleman, 2018). Goleman's approach to emotional intelligence is that emotional intelligence is a competency that intentional individuals can acquire and develop. Emotional intelligence is not to be confused with individual personality or cognitive intelligence (Brown & Moshavi, 2005). According to Goleman, emotional intelligence is a learned ability comprised of personal competence and social competence (Goleman et al., 2002; Goleman, 2006). Personal competence is an important aspect of emotional intelligence that influences leadership effectiveness.

Personal Competence.

One side of emotional intelligence is related personal competence. Personal competence is concerned with the individual or person (Goleman, 1998b). It encompasses those areas under the guardianship and control of the self. When the thoughts and actions of the self are in alignment, clarity and confidence begin to bloom. Clarity of one's values is an important aspect of personal competence. Confidence in

expressing one's voice is another important aspect of personal competence (Kouzes & Posner, 2002). Personal competence is comprised of self-awareness and self-management (Goleman et al., 2002). Self-awareness precedes self-management because one can't manage what one is unaware of or doesn't understand.

self-awareness.

Self-awareness is exactly what it sounds like: being aware of self. The self is who we are on the inside, not necessarily who we portray to others. Intentional self-awareness means looking inside, recognizing one's self, gaining familiarity with one's personality, emotions, desires, passions, strengths, weaknesses, likes, dislikes, etc. (Chopra & Kanji, 2010; Bennis, 2009b; Goleman et al., 2002). The practice of self-awareness takes time and intention (Allen et al., 2016). Blocking out distractions and searching inside for the real *you* are intentional acts (Goleman et al., 2002). As time goes by, getting in touch with one's self becomes easier and faster. In fact, the culmination of self-awareness is being aware in the moment; in the present (Chopra & Kanji, 2010). Self-awareness is a learned ability that leads to personal discovery about one's self (Dearborn, 2002). Furthermore, the ability to be self-aware increases with age and experience (Gardner & Stough, 2002).

Self-knowledge is akin to taking inventory of one's self and accepting it for what it is. To know one's self is a challenging task and probably the most arduous task a person can undertake (Bennis, 2009b). The benefits of self-awareness are well worth the effort for those project managers who are up to the challenge. "Self-aware leaders can change their behavior to adjust for subordinate perceptions toward the goal of increasing

overall leader effectiveness" (Bratton, Dodd & Brown, 2011, p. 129). In other words, self-awareness is a prelude to augmenting one's behavior and interactions with others.

The personal discoveries and revelations of one's self are necessary in order to adjust for and properly respond to difficult situations and people within the context of uncertain and complex project environments (Davis, 2011). For example, project managers are constantly making decisions and judgment calls which are connected to the management of change. Emotions related to past experiences influence the decisions and judgments that are made (George, 2000). Furthermore, the project manager may be characterized by underlying preferences that are related to the self (Goleman et al., 2002). Such undertones may go undetected, but a privately self-conscious project leader is keenly aware of the bias he/she brings to the table (Bratton et al., 2011). Self-management or regulation proceeds self-awareness and enables project leaders to respond favorably to situations without regret.

self-management.

Self-management concerns the regulation of one's own emotion and behavior when dealing with situations involving others. According to Ireland, "if a person is in control of their feelings and emotions, they can create an environment of trust and fairness" (2008, p. 12). This is low-hanging fruit to the savvy project manager especially when uncertainty permeates the project environment (Hebert, 2002). Being able to control the project environment through self-management is a powerful ability that can make or break a project (Sunindijo, Hadikusumo & Ogunlana, 2007). Self-management, also called emotional discipline, "refers to the power we gain through the choices we make to choose how we feel" (Chopra & Kanji, 2010, p. 981). The possibility of

instilling order into the project environment through self-regulation is something that should be capitalized on by the project manager often (Sunindijo et al., 2007).

The actions and reactions of the project manager are influenced by emotions and feelings. With little to no room for error, the project manager must act and react in a favorable manner that progresses the project forward; self-management is a means of ensuring proper actions and reactions are taking place (Goleman et al., 2002). Moods and emotions can have dire effects on the project team and ultimately project performance (George & Sims, 2007a). Moods can be described as low-intensity feelings that have minimal effects on project tasks and work (George, 2000). Moods can last all day and stay hidden just beneath the surface. Emotions on the other hand can be described as high-intensity feelings that have substantial effects on project tasks and behavior (George, 2000). Unlike moods, emotions tend to be short-lived due to their intensity.

A self-aware project manager can recognize the mood or emotion they bring to the environment. A negative mood may impede a project's traction, but a negative emotion can move the project backward resulting in lack of trust, disrespect, and low motivation from team members. "A leader has the capacity to impact organization performance by setting a particular work climate" (Batool, 2013, p. 85).

This notion of self-regulation has been described as an ongoing inner conversation (Goleman et al., 2002). The drama, the back and forth impulses related to a surprise event, take place inside the leader. The client or team member is not privy to this inner balancing act taking place inside the project leader. This inner negotiation is what keeps the leader from becoming a victim to his/her emotions (Ingram, & Cangemi,

2012). "Reconciliation to oneself is the key to get through problems calmly and wisely being understanding to yourself and others" (Belu, 2009, p. 88). Thus, the project leader is able to control the emotion he/she shows in reaction to whatever it is that just transpired.

Project managers and leaders who appraise their emotions and control their reactions commend greater respect and admiration from their respective teams and follower groups (George, 2000). Impulsive behavior and outbursts of emotion can have the opposite effect (Ingram, & Cangemi, 2012). In contrast, meekness is a trademark of someone who has learned to maintain control over their emotions. Strength under control is an attractive quality of personal competence that team members appreciate and remember. The flip side of the coin is social competence. The next step for effective project leadership involves being competent in social settings which includes interaction with project teams and stakeholders.

Social Competence.

The other side of emotional intelligence is related social competence Social competence is concerned with the interactions and relationships that exist between two or more individuals or persons (Goleman, 1998b). It encompasses the emotional awareness of others and the ability to behave in a manner that is deemed appropriate and acceptable from a societal perspective. In short, social competence is all about a person's ability to manage relationships with others (Goleman et al., 2002; Goleman, 2006).

Project managers or leaders who are socially competent can perceive emotion in others, translate it, integrate it, and respond to it with appropriate emotion (Chopra & Kanji, 2010; Brown & Moshavi, 2005). This social competency supplements the project

manager's personality and cognitive abilities in a social setting by improving the quality of relationships with others. Relationships are enriched when project leaders intentionally take interest in others and become aware of their emotions.

social-awareness.

Social-awareness is *other-awareness*; one could say that social awareness is awareness of other's emotions, moods, behaviors, motives, passions, and concerns. In short, social-awareness is the capacity of individuals to read people and groups of people accurately (Gardner & Stough, 2002). Social-awareness includes such things as empathy, active listening, organizational awareness, service, and fairness on the part of the project leader (Goleman, 2014). True social-awareness is learned as individuals take the time to observe and inquire into the lives of others.

The socially aware leader considers the follower's needs, abilities, aspirations, and potential (Gardner & Stough, 2002). Furthermore, the experienced leader can identify and understand emotions and moods of individuals and teams (Gardner & Stough, 2002). Paying attention to the details is what sets the experienced leader apart from the beginner. Body language, facial expressions, voice inflection, and how one carries themselves says more to the leader than actual words in terms of discerning emotion in the follower group. Such discernment and untangling of signals allow the project leader to respond in a manner that puts others at ease. It also establishes trust and sets the tone for honest conversation. Leaders who show a sincere interest in the lives of others can build meaningful relationships both inside and outside the organization.

Organizational awareness is another aspect of social awareness that encompasses the organizational culture and political forces within an organization (Goleman, 2014).

The socially aware project leader is sensitive to the values and vision of the organization. The project leader is also comfortable operating within the political structure of the company because he/she is aware of who has real power and influence when it comes to the sharing of resources within the company.

Service-oriented project leaders know that customer satisfaction is an important project success factor. Meeting the needs of the customer may be as simple as communicating a positive project status message on a regular basis (Goleman, 2014). The project leader who cares about the customer cradles them with sincerity and optimism. In short, the socially aware and service-oriented project leader is hospitable to his/her customers, stakeholders, and team members.

Empathy and compassion are rare in the contemporary project environment because time and resources are so limited. The stress associated with compressed schedules and reduced budgets is enough to isolate key stakeholders and team members from one another due to barriers created by misunderstandings. These situations are opportunities for the socially aware project manager to tear down barriers by showing empathy and compassion to stressed team members and other stakeholders. "By being attuned to how others feel in the moment, a leader can say and do what's appropriate – whether it be to calm fears, assuage anger, or join in good spirits. This attunement also lets a leader sense the shared values and priorities that can guide the group" (Goleman et al., 2002, p. 49). According to Goleman (2014) two kinds of empathy are important for collaborative interactions with others.

Cognitive empathy is concerned with understanding how others perceive their environment or approach life's challenges (Goleman, 2014). When a project leader

understands a team members perspective, he/she poised to collaborate and make informed decisions when project objectives are at stake. The second type of empathy discussed by Goleman (2014) is emotional empathy.

Emotional empathy is concerned with understanding how another person feels at a given moment or in a certain situation (Goleman, 2014). A consistent and accurate recognition of what another person is feeling can result in greater workplace success (Trejo, 2014). Empathetic project managers can recognize and meet the needs of their organization through positive interaction with stakeholders including project sponsors and team members. A lack of empathy can result in missed opportunities and erode team performance because unstated feelings stay hidden beneath the surface (Goleman, 1998a). Thus, empathy exposes the unknown and provides the project leader with an opportunity to address the unspoken in a positive and productive manner. These opportunities are taken advantage of within a framework of social interaction which requires a certain finesse that is reflective of one's mastery of relationship.

relationship management.

Relationship management is an important social competency that deals with the interactions and relationships between people and persons or teams. Relationship management builds upon the foundation of self-awareness, self-management, and social awareness (Goleman et al., 2002). Chopra & Kanji (2010) use the term *management excellence* to describe the interactions and subsequent relationships that form between an emotionally intelligent leader and his/her follower group. Management excellence includes a project leader's ability to resolve conflict, develop other people's potential, build high performing teams, appreciate diversity, challenge other people's perspectives,

inspire and motivate individuals and teams, implement change, and adapt to dynamic social settings (Davis, 2011, Chopra & Kanji, 2010).

Contemporary project managers do not work alone, and their success is closely tied to the performance of the entire project team (Boyatzis, Rochford & Cavanagh, 2017). Performance is an output of effective interpersonal interaction between the project manager and project team. The social skills that a project manager and project team possess are important to how well a team functions and performs. Every ounce of project success is achieved within this context of relationship.

Project managers must also interact with individuals outside the familiar framework of project teams. Internal and external stakeholder relationships are just as dependent on the emotional intelligence of the project manager. The experienced project manager is constantly building bridges knowing that interpersonal relationships and the resulting rapport are the pathway to successful projects (Pryke, Lunic & Badi, 2015; Goleman et al., 2002). The result is a network of bridges or relationships within the project manager's environment; a web of relationships. Such networks provide options and solutions when project dilemmas arise (Kouzes & Posner, 2002). Thus, relationship management is an important social competency within the emotional intelligence framework. The culmination of self-awareness, self-management, social awareness, and relationship management are successful project outcomes that testify to the power of emotional intelligence.

Benefits and Considerations.

Emotional intelligence is a powerful and influential competency that has a direct bearing on project management and ultimately project success. A project manager's

performance is directly related to how competent they are with emotional intelligence or emotional social intelligence (Clarke, 2009). According to Chopra & Kanji (2010), "emotional intelligence is much more powerful than cognitive skills in solving problems and determining who will be on top" (p. 1000). Being on top is equivalent to having authority and *calling the shots*. Calling the right shots at the right time is something that sets leaders apart from followers. An impulsive project manager is susceptible to overreacting to situations and behaving in a compulsive manner without self-restraint. This is damaging to relationships and follower's trust.

The temporary nature of projects places great priority on quickly building trust and commitment from project team members. An emotionally intelligent project manager or project leader can quickly build trust and solicit commitment from members by forming good interpersonal relationships (Clarke, 2009). This is accomplished through effective communication, positive mood, and inspirational interaction. Powerful collaboration is also founded upon effective communication and sharing of information.

The dynamic nature of project management requires good decision making which is based on accurate information (Li et al., 2016, Slevin, 1985). Information and knowledge are always changing. Good decision makers take this into account and rely on the free and frequent flow of information among project team members and stakeholders. Therefore, knowledge exchange is dependent on the project manager's emotional intelligence abilities and his/her rapport with the project team (Clarke, 2009). Good news and bad news are equally important in the project management profession. Team members may avoid sharing bad news with project managers who are impulsive and unpredictable. On the other hand, project leaders who are positive, transparent, and

approachable are much more likely to receive accurate news whether it's good or bad. Team members feel safe sharing the facts with the project manager even when the situation is dire.

Dire situations can be the norm on many projects as project environments grow uncertain and complex. Frustration and anxiety can pervade the environment and negatively affect the project manager and project team. As leader of the group, the project manager must remain confident and committed to the project's vision. With that being the case, emotional intelligence is a powerful ability that enables the project manager to effectively manage change and uncertainty by inspiring, encouraging and motivating team members toward successful project outcomes (Clarke, 2009).

A recent study of 67 project managers in the United Kingdom showed a strong connection between emotional intelligence and project management competency (Clarke, 2009). Four project management competencies were closely correlated to emotional intelligence as follows: Managing conflict (alpha = .86), Teamwork (alpha = .78), Communication (alpha = .70), and Attentiveness (alpha = .68) (Clarke, 2009). Each of these competencies is related to project team interaction and is a determinant of project performance and ultimately project success.

Another study of 110 high-level managers in the United States showed a strong connection between emotional intelligence and leadership outcomes (Gardner & Stough, 2002). Three leadership outcomes were closely correlated to emotional intelligence as follows: Satisfaction ($r = .574$; $p < .01$), Effectiveness ($r = .509$; $p < .01$), and Extra effort ($r = .506$, $p < .01$) (Gardner & Stough, 2002).

George (2000) proposes a strong connection between emotional intelligence and leadership effectiveness. This connection results in: "[1] development of collective goals and objectives. [2] instilling in others an appreciation of the importance of work activities. [3] generating and maintaining enthusiasm, confidence, optimism, cooperation, and trust. [4] encouraging flexibility in decision making and change. [5] establishing and maintaining a meaningful identity for an organization" (George, 2000, p. 1027).

In summary, the human side of project management cannot be ignored. The ability to manage people, emotions, and relationships is a game changing competency for contemporary project managers (Maqbool et al., 2017). The distinctive mental and emotional character of individuals is something that influences the project environment because project environments include people. The prudent project manager is aware of this fact as he/she observes the behavior and interactions of team members and stakeholders. Among other things, project success is dependent on leadership competency and emotional intelligence (Muller & Turner, 2010). The strategies and methods used by project managers must take into consideration the people element and include emotional intelligence.

The following leadership model builds upon the project leadership leverage model in figure 6 by incorporating the personal and social competencies of emotional intelligence.

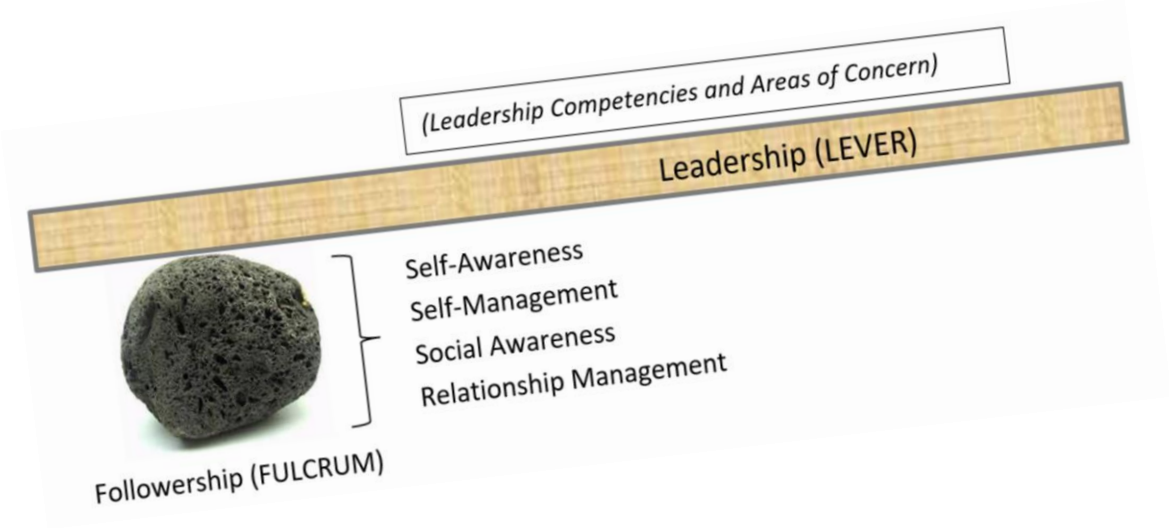


Figure 7: Project Leadership Advantage - Fulcrum Model

Like a lever, leadership is a powerful force that depends on other factors. The most advantageous levers are those that are positioned in a thoughtful and logical manner with respect to the fulcrum. In other words, the relationship between the lever and the fulcrum is important. In physics, the term mechanical advantage is used to convey the importance of this relationship; the position of the lever with respect to the fulcrum determines the magnitude of effort and the resulting leverage. Similarly, leadership advantage conveys the importance of a leader's relationship to the follower.

Emotional intelligence is the factor that addresses the interaction and positioning of the leader (lever) with respect to the follower (fulcrum). Project management is a team effort and the effective project manager knows the importance of maintaining positive interpersonal relationships with his/her team and project constituents.

Concept 4: Organizational Culture and Project Management

Project management offices exist within the organization. Consequently, projects and project managers are influenced by the organizational culture (Andersen et al., 2009; Morrison et al., 2008). Furthermore, organizational culture impacts the project management process and the strategies employed by the project manager (Andersen et al., 2009). It's impossible for the project management process to be impartial and remain unaffected by the parent organization. Like genetic code in an organism, organizational culture is hereditary to the project.

Social Construct.

Organizational culture is a social construct; groups of people interacting over a period of time determine what organizational culture looks like as a result of shared experiences (Bellot, 2011; Schein, 2004; Schein, 1990). For the most part, culture exists beneath the surface while the effects of culture are readily evident to the observer (Linn, 2008; Schein, 2004). The relationship of culture to an organization remains a mystery. Some researchers view culture as a verb or something an organization does. Other researchers view culture as an adjective or something that describes the organization. Still other researchers view culture as a noun or something an organization owns or possesses (Bellot, 2011). From varying vantage points, each of these perspectives is valid; culture is manifested as a verb, adjective, and noun.

This researcher tends to agree that organizational culture is a noun or a "property that the organization possesses" (Bellot, 2011, p. 5). Like a person, organizational culture grows, matures, and develops a unique personality or nature. Unlike a person, organizational culture is collective; organizational culture is a sum of the parts. Similar

to a soup recipe, the kind of culture that exists within an organization is dependent on the individuals, the ingredients, that comprise the group. The culture or flavor of the soup is intangible but heavily present and evident to the observer's taste buds. "The most intriguing aspect of culture as a concept is that it points us to phenomena that are below the surface, that are powerful in their impact but invisible and to a considerable degree unconscious" (Schein, 2004, p. 8). The culture exhibited by a project group is merely a reflection of the culture espoused by the organization. In many environments, projects exist as sub-cultures within the parent organization (Schein, 1990).

According to researchers, a primary cause of project failure is related to organizational culture; project managers mistakenly discount the influence of culture on project performance (Smits, 2017; Morrison et al., 2008). Project managers face an uphill battle within organizational cultures that espouse a functional (vertically arranged) structure that is not conducive to project management (horizontally arranged) structures (Brown, 2008; Morrison et al., 2008). Flattening the hill is possible when organizations transform their business practices from hierarchical organizations to entrepreneurial enterprises; organizational transformation results in fast tracking of projects that result in long term viability (Hoole & Du Plessis, 2002).

According to Brown (2008), the following suggestions can improve the odds for successful project management by shaping the internal environment of functionally structured organizations: 1) Establish a formal project management process within the organization. 2) Develop a culture that supports project management. 3) Establish an appropriate level of authority for the project manager based on project magnitude. 4) Establish realistic expectations for the project manager based on responsibility, authority

and accountability. 5) Develop cross-functional project teams and promote teamwork. 6) Develop systems that assist the project management process, and 7) Develop project managers who are proficient and skilled in project management technique. As these suggestions are implemented by upper management, the organizational perspective that persists will become evident to the individual project manager.

Project Perspective.

Project management perspective is clearly influenced by the organizational culture. Some organizations have a task perspective while other organizations have an organizational or attendant perspective (Andersen et al., 2009). The task perspective sees the project as a process characterized with detailed planning from start to finish. In contrast, the organizational (attendant) perspective sees the project as an attendant to the organization; the project attends to or helps the organization as it evolves or matures. The attendant perspective is more about the project's purpose than it is about the project's tasks or process (Andersen et al., 2009).

A more rationally based organization tends to perpetuate a task-oriented project perspective while a less rationally based organization tends to perpetuate an attendant-oriented project perspective (Andersen et al., 2009). Rationally based organizations have "introduced rules, standards and procedures to ensure that the work and decision making of the organization are carried out in a particular and rational way" (Andersen et al., 2009, p. 481). Furthermore, rationality has four aspects including efficiency, predictability, calculability, and control (Andersen et al., 2009).

These four rationality aspects characterize the task-oriented project perspective which works well with smaller projects having a well-defined scope; attendant-oriented

project perspectives tend to work well with large and ambiguous projects (Andersen et al., 2009). Regardless of project size, the task perspective is aligned with the traditional PMI definition of project management; this entails formal scope definition and project strategy at the start of the project planning phase.

Project Autonomy.

Organizational culture clearly impacts project strategy. In particular, project autonomy and project politics are two key factors that impact project strategy (Artto, Kujala, Dietrich & Martinsuo, 2008b). Project autonomy has to do with how much independence a project has relative to the parent organization. Project politics has to do with the power structure of leadership, allocation of resources, and number of influential stakeholders within the organizations.

The project manager's adoption of a strategy is influenced by the organizational culture. According to Artto et al. (2008b), there are four different project management strategies based on project autonomy and project politics including stakeholder power. The four approaches to project management are: 1) Obedient servant, 2) Independent innovator, 3) Flexible mediator, and 4) Strong leader. The strategy employed by the project manager is influenced by the organizational culture and other related factors such as stakeholders (Artto et al., 2008b).

Project Stakeholders.

Various stakeholder theories exist regarding business organizations and operations. The stakeholder agency theory recognizes shareholders and owners as primary stakeholders having formal power (Huse & Eide, 1996). The stakeholder resource-based theory places emphasis on economic power and encourages collaboration

and cooperation rather than domination and control as a means of attaining goals including financial performance (Huse & Eide, 1996). The stakeholder corporate social performance theory recognizes society as wielding real power (Huse & Eide, 1996). All three of these theories are accurate in terms of describing power, relationships, and responsibility.

A stakeholder map can help identify individual stakeholders that fit into each of the three categories based upon their position or relationship to a specific project and whether they oppose or support the project objectives (Clayton, 2016). The stakeholder corporate social performance framework is perhaps the most accurate model for identifying primary stakeholders within a project organization.

Within the social performance framework, the organization or project has "economic responsibility to investors and consumers, legal responsibility to the government or the law, ethical responsibilities to society and discretionary responsibility to the community" (Hillman & Keim, 2001, p. 126). A careful and experienced project manager recognizes these responsibilities and acknowledges the various stakeholder interests throughout a project's life-cycle (Yang, Shen, Ho, Drew & Chan, 2009).

Exploring and understanding stakeholder expectations is important for the project manager as decisions must be made based upon this knowledge. Project success is dependent on stakeholder satisfaction (Yang, Shen, Drew & Ho, 2010; Els et al., 2012). Research in the area of complex stakeholder networks has revealed the existence of diverse stakeholder expectations which cannot be ignored by the project manager if a successful project outcome is expected (Artto et al.,2008a). Stakeholders are part of the organizational culture and they wield a substantial amount of power relative to their

position within the organization. Since projects have both internal and external stakeholders, differences in stakeholder expectations and interests may cause tension, and result in conflict (Rowlinson & Cheung, 2008).

Stakeholders within an organization may have differing perspectives on an issue compared to external stakeholders. For example, an internal stakeholder may be an upper level manager or supervisor who is affected by a project's timeline and seeks to expedite a project's completion. On the other hand, an external stakeholder like the Environmental Protection Agency (EPA) or the Federal Energy Regulatory Commission (FERC) may expect a lengthy environmental impact study (EIS) before issuing a key permit. The project's timeline is of little concern to the EPA or FERC, while schedule means everything to the upper level manager.

The project manager must bridge this divide and ensure both stakeholder groups are satisfied with the project deliverables despite the differing expectations. Each of these stakeholders has agendas and authority. Broader stakeholder networks introduce even more diversity and complexity to a project's external environment (Artto et al., 2008a). Managing a project successfully within such an environment requires awareness and savvy (Irwin, 2007).

When it comes to success, stakeholders may have different interpretations depending on the project in question. The field of stakeholders may have conflicting criteria for what constitutes a successful project (Artto et al., 2008a). For example, the project management office is concerned with not overspending the budget, while the operations manager is concerned with a timely completion as he/she has commitments to upper management that hinge upon the completion of the project by a specific date. The

project manager must be able to address both issues to claim a successful project completion. The manner in which the project manager approaches differing issues may depend on his/her competencies.

According to Ingason and Jonasson (2009), the process of managing a project includes both objective and subjective competencies. The relevance of these competencies to the project management process and project performance cannot be under-stated (Turk, 2008). Since project management is both a discipline and an art (Alias & Aris, 2014), it is truly objective and subjective in nature (Bredillet, 2010). The success of a project is also perceived both objectively and subjectively by the project team and stakeholder group (Hughes et al., 2004; Brewer, 2012).

This dichotomy in perception can add a degree of uncertainty to the process and cause the project manager to second-guess his/her selected strategy. According to Artto et al. (2008a), the way a project is managed is truly dependent on the various stakeholders and stakeholder networks involved in the project as they bring an array of organizational, social, and technical factors to the table. The project manager must consider these factors within the context of the project environment in order to successfully manage the project. These considerations should also take into account the political aspects of the organizational culture.

Politics.

Organizational culture encompasses the area of politics as this is an important consideration that has the potential to influence the natural progression of a project (Pinto, 2000). Politics is a forming of relationships and project management is conducted within the context of relationships and social interaction. According to Irwin (2007),

politics is using influence or persuasion to steer a project in a preferred direction according to a desired outcome. Politics is also a struggle for resources (Weisenberger & Teufel, 2011) and project management is concerned with allocating and using resources to accomplish project objectives. Therefore, project managers are part of a political organization whether they like it or not. Kawalek (2007) suggests organizations underestimate the political forces that affect decisions and processes.

Landry (2013) calls the project environment a political minefield that can lead to project failure if the project manager is unable to navigate the environment successfully. The attitude toward politics varies from person to person. Some see politics as scheming and manipulating to get their way, while others see politics as building relationships and establishing collaborative discourse with others (Irwin, 2007; Pinto, 2000). In either case, politics is about the process of positioning one's self to obtain approval of or access to needed resources.

The notion of politics becomes apparent when resources and resource allocation come into play. According to Weisenberger and Teufel (2011), organizational decision making is especially political when resource allocation and funding are on the table. Organizational members are competing for company resources, and the political posturing that comes into play is not healthy for the parent organization (Weisenberger & Teufel, 2011). The project manager must understand the connection between politics and projects, because politics is so engrained in the organizational culture. The project manager can start by knowing who has the power and why.

Power can come from a lot of places including formal title, control of resources, alliances, knowledge, and respect (Clayton, 2016; Northouse, 2016). In some

organizations, the system for distributing power is "based on personal background, educational credentials, seniority, loyalty, and successful performance of whatever jobs were allocated to the person by higher authority" (Schein, 2004, p.121). In contrast, other organizations ascribe power based on personal success, internal support, and networking (Schein, 2004). It behooves the project manager to know how power is distributed within an organization. This knowledge helps clarify who is making decisions, authorizing expenditures, and making policy regarding project objectives. Such power and position naturally influence organizational policy.

Prudent project managers recognize the position of individuals, but they also familiarize themselves with organizational policy. In general, policy provides the framework that encompasses an organization's strategies and procedures (Spender, 1989). In some cases, organizational policy is based on past practices and past behaviors that complicate the cross-functional nature of project work (Morrison et al., 2008).

The cross-functional nature of project management is a "significant departure from routine functional processes" (Morrison et al., 2008, p. 28). As a result, an organization may experience growing pains as they incorporate project management processes into their business. Organizational policy must make room for project management strategy which is influenced by industrial practices and standards as they relate to the project's technical delivery (Huemer, 2004). It's important for an organization to support sound project management practices that are aligned with industry; otherwise the project manager may struggle with policy (Longman, 2004).

Competing Values.

The project management practices employed by the project management office is dependent on the organization's culture. An organization's culture may encourage flexibility and adaptability, or stability and control. Similarly, an organization's culture may embrace efficient internal processes, or competitive external positioning (Cameron & Quinn, 2011). These characteristics of an organization differentiate one organization from another in terms of culture; culture is the way organizational life is lived within the confines of the organization. Cameron and Quinn (2011) refer to these opposing dimensions of culture as a Competing Values Framework (CVF).

The CVF results in 4 quadrants. "Each quadrant [in the framework] represents basic assumptions, orientations, and values – the same elements that comprise an organizational culture" (Cameron & Quinn, 2011, p. 41). The four Competing Values Quadrants (CVQs) represent four culture types: 1) The collaborate culture (clan), 2) The create culture (adhocracy), 3) The compete culture (market), and 4) The control culture (hierarchy).

The collaborate or clan culture "emphasizes high flexibility and internal focus" (Song et al., 2017, p. 326). The clan culture describes those organizations that attempt to create shared values and purpose with their employees. Furthermore, these organizations take pride in effective communication and excellent customer service. Another flexible organizational culture is the adhocracy culture.

The create or adhocracy culture "emphasizes high flexibility and external focus" (Song et al., 2017, p. 326). The adhocracy culture describes those organizations that encourage creativity and innovation. Furthermore, these organizations are

entrepreneurial, enterprising, and comfortable with change. Another externally focused culture is the market culture.

The compete or market culture is not as flexible as the adhocracy culture. The market culture emphasizes high stability with an external focus (Song et al., 2017). The market culture tends to describe those organizations with a focus on results, a desire to beat the competition, and a drive to maximize profits. Furthermore, these organizations are concerned with winning and maximizing market share through speed (like the proverbial hare). Another rigid organizational culture is the hierarchy culture.

The control or hierarchy culture is more internally focused compared to the market culture. The hierarchy culture also emphasizes high stability with less focus on the external environment (Song et al., 2017). The hierarchy culture describes those organizations that are focused on predictability, reliability, efficiency, and compliance. Furthermore, these organizations are reflective and methodical in their approach (like the proverbial tortoise). Organizational problems and challenges exist within each of the four organizational cultures. As a result, project management exists as a viable means of solving problems and achieving business objectives within each of the four quadrants or CVQs.

The strategies used by the project manager are highly influenced by the CVQ characteristics and cultural traits. The collaborate culture (clan) is likely to promote the project manager as a flexible mediator, while the create culture (adhocracy) promotes the project manager as an independent innovator (Artto et al., 2008b). Similarly, the control culture (hierarchy) is likely to promote the project manager as an obedient servant, while the compete culture (market) promotes the project manager as a strong leader (Artto et

al., 2008b). The effectiveness of project strategy is certainly a concern of the project manager and the project team.

Project strategy and organizational effectiveness are dependent on organizational culture (Song et al., 2017). Therefore, project performance is influenced by project strategy and organizational effectiveness which are outputs of the respective CVF. Rationality, project management perspective, project autonomy, stakeholders, politics, and organizational policy are all factors that define an organization's culture. Each of these factors is manifested in the project management sub-culture (Andersen et al., 2009), and each of these factors impact project management strategy and performance (Morrison et al., 2008). Another crucial factor that impacts project management strategy and performance is geography.

Concept 5: Geography and Project Management

The effects of geography on the project management profession are not fully understood or appreciated at this time. Therefore, industry is calling for applied research to better understand the effects of geography and the related management variables that impact project strategy (Rapp, 2004). Unlike leadership and organizational culture, geography is a very physical factor that impacts project management strategy and performance. The project management strategies employed at the equator cannot be applied equilaterally in the arctic. Similarly, project environments in urban New York City or Chicago are quite different from project environments in rural Wyoming or Montana. Each place or location has its own unique challenges and opportunities related to project management.

Geography is a matter of place (Matthews & Herbert, 2008). Circumstances and consequences of each project can be different from one place to another (Chan, Scott & Chan, 2004). An experienced project manager will study the place, the unique physical project environment, and develop project management strategies that are suited or attuned to such an environment. Otherwise, like a fish out of water, the project manager will flounder and struggle to perform and push the project in a forward direction; movement is life (Eschenbach, 2013). An intimate knowledge of the physical project environment enables the project manager to develop detailed plans, make informed decisions, and weigh the risks and rewards associated with probable project strategies. A uniform approach to studying physical project environments commences with a formal definition of geography.

Geography is the study of the earth and its physical composition including the atmosphere (air), the hydrosphere (water) the lithosphere (land) and the distribution of life on the planet (McKinney, 1993). A geographical understanding of the project environment encompasses many elements and factors unique to that specific environment. Thus, the science of geography as a two-lane thoroughfare is an appropriate approach for the project manager.

Physical geography and human geography are like bookends for physical project environments. On one side, physical geography confronts the project manager with the reality of the physical environment; landforms, soil types, wildlife, elevation, atmosphere, bodies of water, climate, and weather are all important considerations for the project manager (Pidwirny, 2006). On the other side, human geography confronts the project manager with the reality of the human environment; population, proximity to

major markets, transportation, technology, and human capital are also important considerations for the project manager (Castree, Kitchin & Rogers, 2013; Petrov & Cavin, 2013; Pidwirny, 2006). Both the physical and human aspects of geography impact project management strategy.

Physical Geography.

The physical geography of Alaska is first set apart from other states by its sheer size. The area of Alaska is double that of Texas and represents 16 percent of the nation's land area (Ritter, 1993). The United States Secretary of State, William Seward, purchased the 101-million-acre frontier from Russia in 1867 for $7.2 million on behalf of the United States (Ritter, 1993). The purchase was criticized and labeled Seward's folly; Alaska was perceived as a forbidding, frigid wasteland in 1867 (Ritter, 1993). In retrospect, the 2 cent per acre transaction was a tremendous deal for the United States given its strategic location and resource rich frontier. Literally thousands of projects have been planned and executed in the state of Alaska including the construction of airports, mineral processing facilities, oil producing well sites, and the trans-Alaska oil pipeline. Despite its massive area, strategic location, and abundant resources, Alaska is subject to extreme conditions related to weather and climate.

The United States is comprised of various geographic regions. Each region faces a unique combination of weather and climate events which impact project management (NOAA, 2017). Alaska's climate is like no other as arctic conditions prevail over much of the state throughout the long winter season. This limits the construction window for major construction projects within the state. According to Koehn and Brown (1985),

productivity and efficiency on construction projects is influenced by "air temperature, wind velocity, relative humidity, solar radiation, precipitation, and light" (p. 129).

All these weather factors must be considered by the project manager in order to accurately forecast project milestones and stay within budget (Moselhi & El-Rayes, 2002). Billions of dollars are lost annually due to delays and failures associated with extreme and unanticipated weather events (Freeman, 2017; Diedericks, 2009). "Buildings are damaged during storms; sites turn into seas of mud; freezing temperatures make it impossible to pour concrete" (Freeman, 2017, p. 1). Awareness of weather and climate extremes can help project managers prepare for the worse (Ballesteros-Perez, Smith, Lloyd-Papworth & Cooke, 2018). Precipitation is especially concerning as field execution may expose personnel, equipment and materials to the elements.

Substantial amounts of precipitation including heavy rainfall and fog can be expected in Alaska throughout the summer. Project implementation is less efficient under these conditions. Wet technology projects including concrete structures and paving are especially sensitive to precipitation (Dytczak, Ginda, Szklennik & Wojtkiewicz, 2013). Coating and paint applications are also vulnerable to precipitation and high humidity. Heavy wind and hail only complicate the situation as weather fronts move in and out of different regions of the state.

Precipitation, humidity, and wind can wreak havoc on a job site. Special provisions are often required to baton down the hatches which results in costly delays and exposure of personnel. Safety-critical industries are especially at risk to the frequent start-up and shut-down construction modes (Saunders, Gale & Sherry, 2013). The

transition from fall to winter is characterized with seasonal shutdowns in some areas and limited construction in others (Dytczak et al., 2013).

Construction in Alaska continues in the winter with limited production in most industries executing outside project work. Project implementation is less efficient under wintry conditions. In fact, construction efficiency decreases by as much as 50% when temperatures drop below 20 degrees Fahrenheit (Diedericks, 2009). Some of the worst weather occurs in late fall and winter with Anchorage and the coast getting most of the snow (Esler, 2011). Interior locations may get less snow, but the cold temperatures can literally halt all outside construction. According to Osborn (2016), temperatures below minus 70 degrees Fahrenheit are unheard of in the Lower 48 but are common in the state of Alaska. During extreme cold periods, extraordinary measures are taken to ensure the protection of personnel and equipment from the elements. Weather can pose a huge distraction to the project manager throughout the year.

Projects that occur in these extreme weather environments require special attention to prevent them from becoming distractions (Mole et al., 2013). The National Oceanic Atmospheric Association (NOAA, 2017) is charged with monitoring weather across the Lower 48 states. Currently, there is not a NOAA climate center in Alaska, but a regional service director does reside in Anchorage, Alaska. As a result, project managers rely on local meteorologists to plan field work and forecast task completion. The weather environment can be exacerbated by additional factors related to Alaska's position on the globe.

Alaska's position relative to the equator causes the state to experience extreme seasons and tides. As a result, Alaska is referred to as the Land of the Midnight Sun.

"The sun's declination affects the seasons as well as the tides" (NOAA, 2018, para. 2). The summer solstice results in the longest day of the year yielding 22 to 24 hours of daylight depending on location in the state; Barrow, Alaska enjoys 80 consecutive days of sunshine with zero darkness. Each year, a summer solstice and winter solstice occur on June 21 and December 22 respectively (NOAA, 2018).

The winter solstice is the shortest day of the year yielding just a couple hours of daylight; Barrow, Alaska experiences 67 consecutive days of darkness with zero sunshine. During this time, darkness can be a distraction to the project manager and a frustration to project teams. Winter time projects require special provisions including mobile light plants and personnel lighting. Even with the light plants, construction moves slowly as workers take deliberate action to identify and anticipate hazards (Ross, 2018). The tide of the ocean is also affected by the lunar declination.

Tidal bulges occur twice a day which results in two high tides and two low tides every 24 hours and 50 minutes (NOAA, 2018). The changing tides can cause projects near the coastline to suffer delays if not planned accordingly. Marine projects and off-shore structural projects must be carefully planned as infrastructure including scaffold can be ripped from man-made marine structures by violent wave action on a high tide. The tides in Alaska are some of the most extreme tides in the world. According to NOAA, tides as large as 12.2 meters occur in Anchorage, Alaska (NOAA, 2018). This can cause shift work to experience costly delays as beach corridors are often used to access remote job sites. Remote job sites are at greater risk when natural disasters strike the environment.

Alaska is prone to natural disasters related to its geography. Alaska is a part of the Ring of Fire, a term used to describe a geographic region that encompasses a string of volcanoes around the edges of the Pacific Ocean. Roughly 90% of all earthquakes and 75% of all active volcanos are found in this region (National Geographic, 2018). On Friday, March 27, 1964, the largest earthquake ever recorded in North America struck Southcentral Alaska; the 9.2 magnitude earthquake lasted four minutes and triggered numerous tsunamis, mudslides, and avalanches in the state. The effects of the earthquake were felt as far south as Texas and Florida (Naske & Slotnick, 1987; University of Alaska, 2018a). According to the Alaska Earthquake Center, an earthquake is detected every 15 minutes (University of Alaska, 2018b). In 2014, over 40,000 earthquakes were recorded in the state of Alaska. Seventy-five percent of the earthquakes in the United States having a magnitude greater than 5.0 occur in Alaska (University of Alaska, 2018b). This researcher personally experienced a 7.9 magnitude earthquake in 2002, and a 7.1 magnitude earthquake on November 30th, 2018 (US Geological Survey, 2018). These earthquakes often trigger a shutdown of field-work if they happen during work-hours. While earthquakes and volcanoes have affected multiple projects throughout the state of Alaska, vulnerability to other natural forces cannot be ignored by the project manager.

Forest fires, avalanches, rock-slides, mud-slides, tsunamis, and floods can plague construction projects throughout the state of Alaska. According to Gale (2018), natural disasters caused global economic losses exceeding $210 billion in 2016. Managing projects in regions prone to natural disasters can quickly distract a project manager and consume a project's budget. Tentative planning for such events should be considered

during the risk identification and mitigation process (Jones, 2017a). Preparing for the unexpected is an important aspect of project management which must be considered within the context of physical geography. Physical geography is the first part of the equation from a geographical perspective; the second part of the equation is human geography.

Human Geography.

Human geographical factors can also be a distraction to the project management process in Alaska. Human geography in Alaska is shaped by the rural and remote nature of the state. Alaska's population is miniscule relative to its geographical area; Alaska is home to 1.2 persons per square mile, while the United States is home to 87.4 persons per square mile (US Census Bureau, 2017). As a result, social conditions in rural regions suffer from an educational and economic perspective (Petrov & Cavin, 2013; Pidwirny, 2006). "Alaska's small population spread over a huge geography will continue to influence its limitations and opportunities" (Klouda, 2015, p. 39). Such limitations have an impact on both social conditions and project management endeavors.

These social conditions negatively influence human capital when it comes to entrepreneurship, availability, and capability of the workforce. This can negatively impact project work in rural areas. "The outlying areas of Alaska demonstrate an extremely low stock of people with science and technology occupations" (Petrov & Cavin, 2013, p. 355). Therefore, external human resources are imported from other regions and states to perform technical tasks related to project implementation. These staffing maneuvers can add unexpected costs to a project if not anticipated during the

project planning phase. While an educated and productive workforce are essential to successful project implementation, availability and access to materials cannot be ignored.

Alaska's supply of materials and resources is extremely limited. The consumption of resources for construction projects can decimate the inventories of local warehouses and vendor supply chains; availability of resources is even more limited in remote parts of Alaska (Fister-Gale, 2011). As a result, materials must be imported from the Lower 48 states in sufficient quantities to meet the demands of projects throughout the state of Alaska.

Alaska's proximity to major markets in the Lower 48 states can lead to temporary shortages of supplies and materials required for project implementation and construction. When this happens, project costs rise as standby rates and per diems must be paid to craftsmen and specialists who have traveled to Alaska from other parts of the country. Furthermore, delays in schedule may result in missed opportunities and financial risks associated with lost revenue. Delays can also push the project from a preferred construction window into an uncertain, severe-weather prone, construction window. In short, pre-planning and procuring even the most basic materials is important to eliminate project delays in the field (Ewers, 2013). Transporting materials from the major ports in Alaska to outlying areas is another important consideration.

Transportation is a major consideration for project managers because it affects the movement of resources required for a project. Materials, equipment, and personnel can travel to the jobsite via land, water, or air. In general, the cost of transportation increases with the distance between project site and point of origin. Costs also increase with the

size or weight of the load going to the project site. The volatility of fuel prices can make it difficult for projecting transportation costs regardless of transportation mode.

Surface transportation by highway is typically the most economical mode of transportation for projects that are accessible from the road system. Even so, surface transportation can be a challenge throughout the year as weather can cause "frequent icing, cracking, and washing away" of major highways (Connor & Harper, 2013, p. 23). Technical driving skills are a necessity when conditions take a turn for the worse (Jagerbrand & Sjobergh, 2016). The integrity of Alaska's highway system is influenced by both the weather and the regional substructures.

Highway substructures lack integrity due to permafrost soil types. "Permafrost – generally defined as soil continuously frozen for two or more years – has been a source of frustration for Alaska's engineers and plays a key part in today's surface transportation challenges" (Connor & Harper, 2013, p. 24). Constant highway maintenance and construction can lead to costly delays that directly impact project schedules. Regardless, the number of roads and highways is limited given the size and remoteness of the state of Alaska. For this reason, other transportation modes including marine and aviation are relied upon for projects in remote regions of the state.

Maritime transportation is a common mode of transportation for projects situated near the water. Many native towns, villages, and fishing outposts exist in close proximity to Alaska's coast; Alaska has over 6,600 miles of coastline (Connor & Harper, 2013). As a result, barges and other marine vessels typically service these seafaring communities. The logistics associated with maritime transportation can be a daunting task for the project planning team. Maritime traffic is vulnerable to extreme weather, changing tides,

and mechanical issues associated with the corrosive salt-water environment. Accurately forecasting material deliveries is difficult when transporting materials by barge. Preparing for weather delays is generally a given for the experienced project manager working at remote project sites (Ewers, 2013). A viable alternative to maritime transportation is aviation transportation.

Aviation transportation is an alternative to maritime transportation in coastal regions. For remote projects sites in interior Alaska, aviation may be the only mode of transportation. The interior region of Alaska constitutes a vast area of land that is generally only accessible by airplane. Regardless of location, aviation is a common transportation mode throughout the state of Alaska. In fact, Alaskans are eight times more likely to travel by air than people living in the Lower 48 states (American Society of Civil Engineers [ASCE], 2017). Eight out of 10 communities in Alaska are only accessible by airplane or boat, so a majority of the state depends on aviation for daily staples including food and medicine (ASCE, 2017). It is no surprise that air transportation costs are high which adds to project construction costs. Forecasting project expenditures can be painful as the uncertainty of transportation and its impact on project schedules become a reality. Once again, this causes distractions that compromise the project management process.

The project management process is at risk because of Alaska's unreliable infrastructure for transportation and communication. Reliable communication is a necessity for working in harsh environments due to safety concerns and contingency planning. Communication with local and distant stakeholders is also necessary for alignment and collaboration on serious project issues. In order to sustain a safety culture

that promotes project safety, reliable communication networks are required (Bulger, 2012; Choudry et al., 2007). The reliability of communication is intrinsically tied to telecommunication infrastructure.

Telecommunication infrastructure exists in strategic locations throughout Alaska. However, aging infrastructure is compromising communication in a lot of these areas. Limited funding is available to "maintain the essential infrastructure that connects customers to the local, wireless, and long-distance networks" (Hudson, 2015, p. 179). As infrastructure is neglected, certain aspects of project management performance are at risk including safety. Remote project sites are even more at risk from a safety standpoint when communication is compromised and/or found to be inadequate.

These remote areas are typically void of infrastructure including cellular towers and fiber optic networks. Some progress is being made in remote parts of the state. A local communications company in Alaska is in the process of extending coverage along the 415-mile-long road between Livengood, Alaska and Deadhorse, Alaska. "The highway, which crosses the Yukon River and the Arctic Circle, is a popular tourist route, as well as year-round supply conduit for North Slope oilfields" (Bross, 2017, p. 1). The installation of a telecommunication tower was approved for this area in an effort to address lack of communication in the event of an emergency.

The telecommunication tower came with a hefty price tag, $500,000, but expanded coverage for a 15-mile radius. The Dalton highway is one of the longest highways in America and is used to transport construction materials and equipment to the oil-fields in Prudhoe Bay. Having cell phone coverage midway on the Dalton highway greatly improves safety for the 250 trucks that use the highway daily (Bross, 2017).

Once again, reliable communication with team members as well as local stakeholders is sometimes compromised due to limited communication infrastructure. This can be a distraction and inconvenience for the most seasoned project manager.

Geography and Strategy.

Geography is a reality that impacts project management processes and performance in the state of Alaska. Geography casts a wide net that encompasses both the physical and human aspects of a science that explores the details of a place (Matthews & Herbert, 2008). Each of these aspects of geography must be taken into account during the project planning and project implementation phases of a project (Fister-Gale, 2011). Such consideration gives the project manager the benefit of foreknowledge related to geographical details that can potentially waylay a project. "During planning and execution of construction projects, project planners and managers make various assumptions with respect to execution of construction activities, availability of resources, suitability of construction methods and status of preceding activities" (Naoum, 2015, p. 406). The assumptions made by the project manager are a reflection of his/her understanding of the geography and project situation (Fister-Gale, 2011).

Geographical and situational awareness are equally important to the project manager because they both have the capacity to influence the direction and speed of a project. According to Petrov and Cavin, situational awareness or 'situatedness' is an "appreciation of local knowledge, promotion of local initiative, devolution of control, development of knowledge-based economy, and so forth" (2013, p. 348). In essence, situational awareness is a detailed snapshot of a place within a specific interval of time whereas geography is a broader perspective that is less interested in detail. For the

purpose of illustration, if geography is the layout of the kitchen, situational awareness is the layout of the pantry or cupboard. An experienced project manager is accustomed to zooming in and out of the details of a place as decisions are made and strategies are developed during the planning phase.

The resultant strategies are concerned with project success factors that achieve a project's objective(s). A project that takes six weeks to implement in the state of Georgia may take ten weeks to implement in the state of Alaska due to factors that are unique to the Alaskan environment; permafrost is a soil type found throughout the state of Alaska that can negatively impact a project's timeline. Proper vetting of soil in Alaska must be planned for in order to avoid discoveries that negatively impact schedule. Geographical planning for arctic regions may take place in four stages including framing, risk identification, stakeholder engagement, and basis of design (Mole et al., 2013).

The framing stage is concerned with answering three basic questions: 1) What is the current state or status of the project? 2) What is the preferred state or status? and, 3) How can the preferred state be achieved? (Mole et al., 2013). These questions may illuminate both objective and subjective criteria related to the project objective(s). Mole et al. (2013) outline several deliverables related to the framing stage:

- Team alignment based on understanding of project objectives, geographical setting, and situational awareness
- Identification of risks and opportunities based on present situation, past experiences, and lessons learned
- Agreement on success criteria and respective metrics
- Stakeholder identification and engagement philosophy

- Understanding of key decisions - past, present, and future
- Problem solving, proposed solutions, and optimization opportunities
- Schedule development including key milestones with action plan

Each of these deliverables contribute to the project framework within a geographical setting. Furthermore, this stage is a stepping stone to the risk identification stage.

The risk identification stage is concerned with recognizing potential risks associated with the project within the project environment. Potential risks are drawn from both the pools of geography and situational awareness. The project team must have a wide enough view to capture "the range of possible realizations that may occur" (Mole et al., 2013, p. 326). The risks are weighted or prioritized based on probability or likelihood and consequence. Such weighting determines the appropriate level of risk mitigation. For example, a highly probable risk that carries severe consequences would be at the top of the list and should be sufficiently addressed during the planning phase of a project. Stakeholder engagement can occur after identifying and addressing potential risks to the project.

Stakeholder engagement is an important stage that can supplement the existing project strategy by providing additional details relevant to the environment. For instance, stakeholders with a history of living and working in a specific geographic region are more likely to recognize weather patterns, anticipate transportation issues, and understand workforce availability. Stakeholders can also validate or disprove the assumptions made by the project manager and project team. This validation can provide crucial details that may have been missed during the framing stage. Confirmation of solutions, strategies and risks can also provide reassurance to the project team in terms of geographical

planning and readiness (Mole et al., 2013). The perspective and offerings of stakeholders are necessary precursors to the basis of design stage.

The basis of design stage represents a culmination of planning that is based on relevant geographical data and situational intelligence. Furthermore, the basis of design serves as a framework for the project scope of work, project schedule, and project budget. For example, foreseeable weather may be planned for in a schedule while unforeseeable weather remains an unknown; the anticipation of foul weather can be accounted for in schedule (Ballesteros-Perez et al., 2018). In short, the geography and situatedness of the project site helps to establish boundaries for the project scope and reasonable expectations for the project team.

Project managers and their teams may or may not be at home in the geographic regions that establish these project boundaries. If the region is not their home, they must strive to understand the community and stakeholders that call it home (Applebaum, 2016). "The impacts that projects have on our environment should be viewed more seriously, and both project management practitioners and researchers must take ownership of their ability, as change agents, to take greater responsibility" (Pasian, 2017, p. 2). As guests, project managers must carefully build trust with community stakeholders and truthfully communicate their intentions (Applebaum, 2016). Successfully managing projects (and conducting business) in Alaska's frontier is dependent on the relationships between internal and external stakeholders.

Project management involves stakeholder management and stakeholders are an essential component of human geography. Successful project managers are able to reach across the table and convey a project's mission to the community. Furthermore, they are

open-minded and transparent in their decision-making (Applebaum, 2016). While progress has been made with regard to economic and political matters, "the circumpolar countries are still searching for better ways to manage their northern frontiers" (Petrov & Cavin, 2013, p. 348).

As a steward, the project manager is responsible for developing and proposing sustainable solutions that succeed in Alaska's geography. As a result, the project management profession is as influential on a place as a place is on the project management profession. In other words, a mutual relationship exists between a geographical region and the implementation of a project; they influence one another, and they depend on each other for performance and success.

Project Impact Factors

As evidenced by the literature review, project management strategy and project performance are impacted by several factors including leadership, emotional intelligence, organizational culture, and geography. These factors shape the project environment which must be interpreted and navigated effectively by the project manager in order to realize successful project outcomes. The following questions have been advanced as viable entry points into exploratory research of project environments in the state of Alaska.

1. To what extent did leadership impact project strategy and performance in Alaska?
2. To what extent did emotional intelligence impact project strategy and performance in Alaska?
3. To what extent did organizational culture impact project strategy and performance in Alaska?

4. To what extent did geography impact project strategy and performance in Alaska?

Each of these inquiries offered a unique perspective into the project management profession within the state of Alaska.

The concept map depicted in Figure 8 provides a logical framework for the literature review undertaken by this researcher. The map attempts to illustrate the relationships between the numerous streams of literature consulted by this researcher. The curvy two-dimensional arrows highlight the interactions of leadership across all literature sources. Similarly, the straight two-dimensional arrows depict the external connections that exist across the disparate literature streams. Incidentally, the source of the literature stream is consistent within the internal boundaries of the individual literature stream. The one-dimensional arrows further highlight the interactions that exist externally from one literature stream to the next. It is worth noting that the theme of *relationships* surfaced repeatedly within each of the literature streams. In addition, *people* or *persons* appeared to be a common denominator among the various literature streams. This concept map is proposed as a summary and clarification of the literature streams and topics that were investigated as part of this exploratory research related to project environments and their impacts on project strategy and performance.

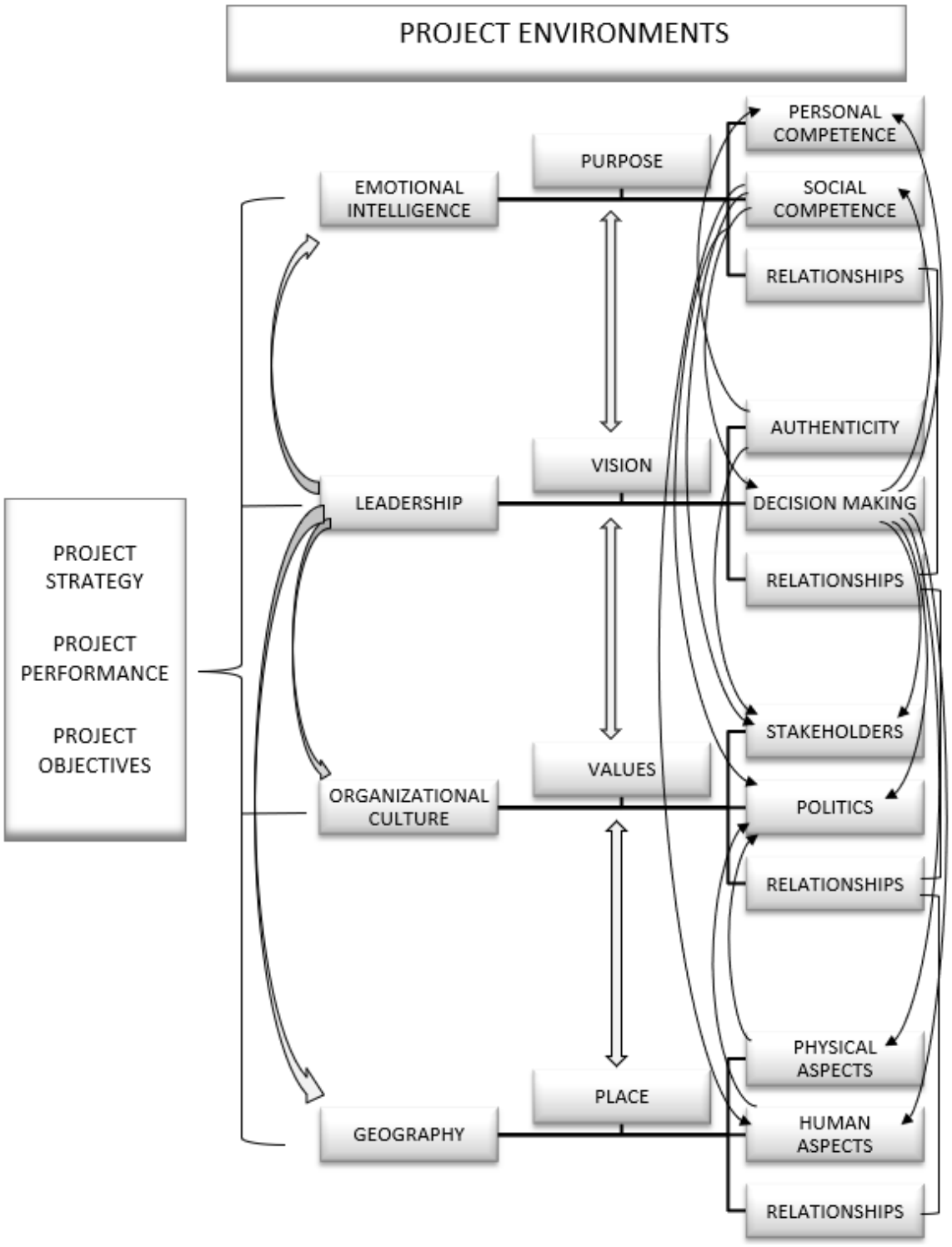


Figure 8: Concept map for Literature Review

Conclusions

In conclusion, project management is a growing profession that is necessary for resource development, organizational growth, market opportunities, global competition, change management, and business survival. Optimizing project management processes and implementing appropriate strategies is important since all industries and businesses are generally concerned with growth, competition, transformation, and survival. Furthermore, project management effectiveness is important to stakeholders across the globe.

Organizations in Alaska are especially impacted by project management processes and concerned with project management performance. The resource rich state of Alaska is open for business and project managers are the ones pushing the cart. Projects are being sponsored by Alaska's military bases, gold mining operations, electrical power generation cooperatives, coal mining companies, salmon fisheries, oil and gas industry, health care industry, and tourism industry (Klouda, 2015).

In addition to thousands of industry sponsored projects, several mega-projects are being pursued by the state of Alaska. These include the Susitna hydroelectric power project, Knik Arm bridge project, Juneau access project, and the Trans-Alaska Gas pipeline project (Klouda, 2015).

> The biggest news in the construction outlook for the coming decade includes the plans for a Trans-Alaska Gas pipeline, a project the Kenai Peninsula Borough, for one, is already trying to foresee in a number of sectors. Borough Mayor Mike Navarre, in his successful 2014 campaign for a second term, spoke of the need to look at possible infrastructure needs due to the anticipation of five thousand

> construction jobs related to the Nikiski LNG (liquid natural gas) facility. Roads, schools, housing, and small businesses will all likely need to expand in Nikiski in the coming year, Navarre says, a prospect that will require also anticipating for the time when most of those jobs go away. (Klouda, 2015, p. 41)

Each of these projects, including the trans-Alaska gas pipeline project, is about change; project management is solely focused on change (Pasian, 2017). Effectively managing projects in Alaska's last frontier will require project managers that understand the impact of leadership, emotional intelligence, organizational culture, and geography on their respective projects.

CHAPTER III

METHODOLOGY

Introduction

Based on the literature review, project management is an important process that provides solutions to organizational problems and business needs. As agents of change, project managers are tasked with bringing about positive change by advancing project objectives that address the business case (Ong et al., 2009). Project objectives and business objectives may or may not be in alignment. Alignment is possible if the internal stakeholders on a project are upper level managers within the same organization. Unfortunately, project environments are complex and very different from the business environment or organizational setting (Anantatmula, 2010; Gehring, 2007). Therefore, project managers are challenged to navigate a dynamic project environment as they progress the project through the planning and implementation phases within a business setting.

Many of the factors affecting project management have to do with people (Anantatmula, 2010). For example, leadership has to do with influencing people toward a common goal. Similarly, emotional intelligence has to do with establishing and maintaining positive social interactions with people in the workplace. Thus, it is no surprise that the methodology and research design involved instruments specifically chosen to evaluate people related factors such as leadership, teamwork, emotional intelligence, organizational culture, and geography.

The project management profession is vulnerable to a host of environmental factors (Davis, 2011; Jones, 2017a; Koehn & Brown, 1985; Yazici, 2009;). This subjection to environmental factors is especially apparent in the state of Alaska where limitations, complexity, and change are the norm. Project strategy and performance are at stake as the exigencies of the profession are pushed to the limits. These same limits yield innovative solutions as Alaska's project managers rise to the occasion. "Alaskans have never lacked creativity where large construction projects are concerned" (Fay, 2003, p. 5). Several research questions will be addressed as a result of this research on project management in the state of Alaska.

Research Questions

As evidenced by the literature review, the project management profession is impacted by several factors including leadership, emotional intelligence, organizational culture, and geography. These factors shape the project environment and impact the project management process in the state of Alaska. The project manager must carefully interpret and navigate the project environment to realize successful project outcomes. Project managers have no stuntmen to fill in for them when the going gets tough; the project manager sits alone in the driver's seat. In short, the profile of the project manager influences whether he/she can successfully navigate the project environment. Several questions had to be addressed to make this assertion: Are project managers authentic leaders? Are project managers emotionally intelligent? Do project managers depend on their project teams? Do project managers thrive in particular organizational cultures and suffer in others? Do project managers in the state of Alaska face an uphill battle because of geography? These inquiries gave way to the following research questions which

served as a foundation to exploratory research of project environments in the state of Alaska.

- RQ1. To what extent did leadership impact project strategy and performance in Alaska?
- RQ2. To what extent did emotional intelligence impact project strategy and performance in Alaska?
- RQ3. To what extent did organizational culture impact project strategy and performance in Alaska?
- RQ4. To what extent did geography impact project strategy and performance in Alaska?

Each of these questions offered a unique perspective into the project management profession within the state of Alaska.

Research Design

A mixed methods research approach served as the basis of design for this exploratory research project. Mixed methods research has been given many labels by past research scholars including the third path, the third research paradigm and the third methodological movement (Jogulu & Pansiri, 2011).

> Mixed methods, being the third research paradigm, is known to be a profoundly comprehensive technique for research in social sciences through integration of thematic and statistical data. Divergent findings created through differing data collection and analysis techniques appear to lead to greater depth and breadth in overall results, from which researchers can make more accurate inferences with increased credibility. (Jogulu & Pansiri, 2011, p. 687)

A convergent parallel design was used by combining quantitative and qualitative methods (Creswell, 2014). The convergent parallel design implemented the quantitative and qualitative designs concurrently to ensure high quality data and insights were obtained (See Figure 9).

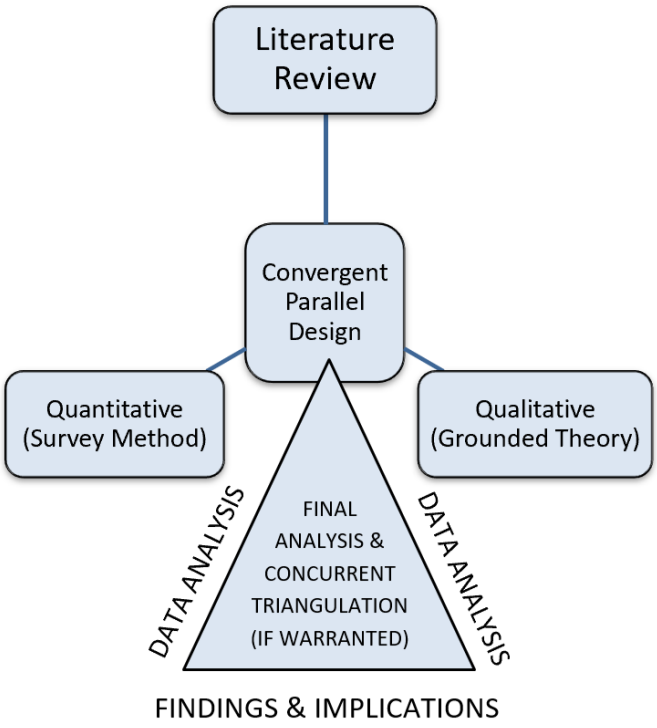


Figure 9: Mixed Methods – Convergent Parallel Design

The quantitative aspect of this research was implemented using a survey design. The survey was objective in nature and took into consideration several factors stemming from the literature review. An objective approach to project management based on numerical data was important for subsequent analysis.

The qualitative aspect of the research was implemented using a grounded theory design consisting of observations, artifacts, and face-to-face interviews. The interviews were informal and subjective in nature. Once again, the interviews and observations were bounded by those factors stemming from the literature review. A subjective

approach to project management based on individuals, experiences, and feelings was equally important for ensuring credibility of the subsequent analysis.

This combination of objective and subjective reasoning reinforced the overall research objectives and served as a logical approach to addressing the four research questions dealing with project management in the state of Alaska. Gathering knowledge through inductive and deductive processes enhanced and reinforced findings. Furthermore, the quantitative and qualitative aspects of research complemented one another in this exploratory research effort.

Quantitative – Survey Design.

The quantitative aspect of this exploratory research utilized a survey design. "Survey research determines and reports the way things are; it involves collecting numerical data to test hypotheses or answer questions about the current status of the subject of study" (Mills & Gay, 2016, p. 10). The survey was designed to provide a numeric description of opinions, competencies, and attitudes held by the project management profession in the state of Alaska (Creswell, 2014). The survey design consisted of seven sections: 1) General Information, 2) Opinions, 3) Emotional Intelligence, 4) Decision-Making, 5) Authentic Leadership, 6) Project Performance Criteria, and 7) Organizational Culture (see Figure 10).

The General Information section included seven preliminary survey questions used to ascertain gender, age, ethnicity, experience, education, location, and certifications. Trends and statistical anomalies associated with these individual categories provided insight and generalizations related to project management in the state of Alaska.

The Opinions section was used to obtain participant ratings related to each of the research questions. These six rating questions included leadership, decision-making, emotional intelligence, organizational culture and geography. In some cases, these questions confirmed bias associated with influential factors discovered during the literature review.

The Emotional Intelligence section utilized a previously developed and proven instrument to ascertain emotional intelligence on four levels. The Trait Emotional Intelligence questionnaire or TEIQue measures emotional well-being, self-control, emotionality, and sociability based on 30 questions (see Appendix A). This instrument was used as written and was unaltered to remain compliant with the conditions of use associated with the instrument. This ensured reliability based on historical use of the instrument.

The Decision-Making section utilized a previously developed and proven instrument to ascertain leadership style as it relates to working with teams. The Jerrel/Slevin Management instrument was comprised of 20 questions used to evaluate leadership style by measuring the subordinate group's information input to decisions on one axis and decision authority on the other axis (Slevin & Pinto, 1991). Four possibilities existed including autocrat, consultative autocrat, consensus manager, and shareholder manager (see Appendix D). This instrument was also used as written and was unaltered to remain compliant with the conditions of use associated with the instrument. Once again, this ensured reliability based on historical use of the instrument.

The Authentic Leadership section also utilized a previously developed and proven instrument to evaluate leadership authenticity. The Authentic Leadership Questionnaire

or ALQ used 16 questions to measure leadership authenticity on four levels including transparency, moral/ethical, balanced processing, and self-awareness (see Appendix E). This instrument was used as written and was unaltered to remain compliant with the conditions of use associated with the instrument. The 360-feedback portion of this instrument was omitted due to the nature of the survey. The Project Performance Criteria section referred to a previously developed instrument used to measure project performance. The Construction Project Success Survey or CPSS instrument was used by Hughes, Tippett and Thomas to evaluate project performance based on strategy and success (see Appendix G). In this researcher's survey, project strategies were divided between planning and implementation phases. The planning phase included scope, schedule, and budget. The implementation phase included safety, quality, and customer satisfaction. Participants were asked to rank each of the strategies based on their perception of importance. Performance categories from the CPSS were referenced in the project survey using two questions; one question for each of the two project phases. However, the 32 questions originating from the CPSS were not used.

The Organizational Culture section referred to a previously developed instrument used to measure organizational culture. The Organizational Culture Assessment Instrument or OCAI was used by Cameron and Quinn to evaluate organizational culture along four fronts: 1) Flexibility and freedom to act, 2) Stability and control, 3) Internal focus and integration, and 4) External focus and differentiation (Cameron & Quinn, 2011). In this researcher's survey, four culture types were described and presented as potential reflections of the participant's project culture (see Appendix F). Participants were asked to select what culture type best represented their organization's project

culture. The four organizational cultures from the OCAI were referenced in the project survey using a single question. However, the 48 questions originating from the OCAI were not used.

Figure 10: Elements of the Quantitative Survey Design

Each of these sections was crafted with three research questions in mind. RQ1 thru RQ3 were adequately addressed through survey questions originating from previously developed and proven instruments. Furthermore, the survey was limited to active project managers and project stakeholders working in the state of Alaska.

Qualitative – Grounded Theory Design.

The qualitative aspect of this exploratory research utilized a grounded theory design specifically crafted to address RQ4. The grounded theory design for this exploratory research included structured interviews with project managers working in the

state of Alaska. Field observations and artifacts were also important elements included in the grounded theory design (See Figure 11).

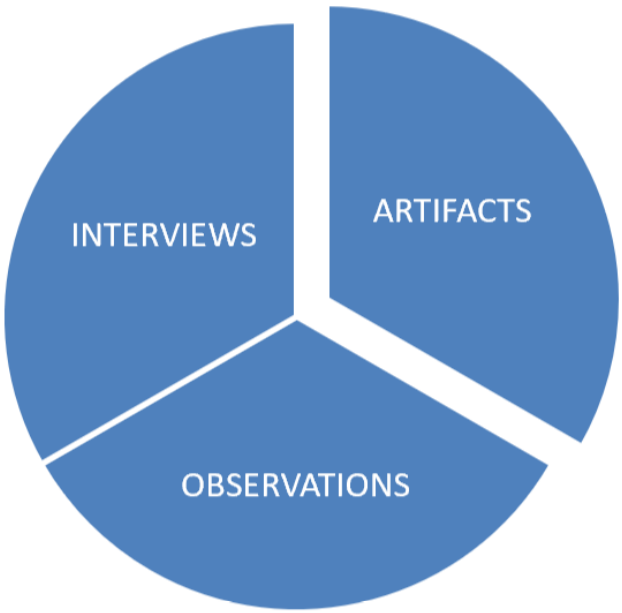


Figure 11: Elements of the Qualitative Grounded Theory Design

Combination of Quantitative and Qualitative.

The combination of two different research methods provided unique vantage points related to project impact factors including leadership, emotional intelligence, organizational culture, and geography. Collecting and analyzing both quantitative and qualitative data enhanced the veracity and credibility of findings related to project management in the state of Alaska. In short, the application of a mixed methods approach using a convergent parallel design offered a degree of certainty that important themes and factors related to project management would be discovered. The dichotomous nature of this research was based on two strategies: convergent parallel (QUAN-Qual) and convergent parallel (QUAL-Quan). The rationale concerning these

selections was based on the nature of the research questions and the related literature review.

convergent parallel (QUAN-Qual) strategy.

Research questions RQ1 thru RQ3 were addressed using a convergent parallel (QUAN-Qual) strategy. This strategy was straightforward as it emphasized the collection and analysis of quantitative data which served as the backbone of the research effort (Creswell, 2003). In essence, this strategy placed emphasis on the survey design previously described; the qualitative aspect of this strategy was secondary (See Figure 12). The collection and analysis of secondary qualitative data was used to explain and interpret findings from the survey using concurrent triangulation.

Figure 12: Convergent Parallel QUAN-Qual Strategy

Incidentally, this strategy placed 90% emphasis on RQ1 thru RQ3 and 10% emphasis on RQ4. This strategy is referred to as phase 1 of the overall research effort.

convergent parallel (QUAL-Quan) strategy.

Research question RQ4 was addressed using a convergent parallel (QUAL-Quan) strategy. This strategy was also straightforward as it emphasized the collection and analysis of qualitative data (Creswell, 2003). In essence, this strategy placed emphasis on the grounded theory design previously described; the quantitative aspect of this strategy was secondary. The collection and analysis of secondary quantitative data was used to explain and interpret findings from the grounded theory approach using concurrent triangulation.

Figure 13: Convergent Parallel QUAL-Quan Strategy

Incidentally, this strategy placed 90% emphasis on RQ4 and 10% emphasis on RQ1 thru RQ3. This strategy is referred to as phase 2 of the overall research effort.

concurrent triangulation.

The integration of findings related to phase 1 and phase 2 was an important step in the research process. The strategies employed in phase 1 and phase 2 yielded independent findings that were relevant to the corresponding research questions.

Concurrent triangulation was used to confirm (cross-validate) and corroborate the findings where the two phases overlapped (Creswell, 2013). The benefits of triangulation went beyond validation by including an expansion and enhancement of the research topic (Yeasmin & Rahman, 2012). For example, the impacts of geography on project management can be mitigated by project leaders who place emphasis on schedule as a project management strategy. This type of connection was reinforced through the application of concurrent triangulation.

In short, triangulation brought clarity during analysis by looking at project management factors from two different perspectives. "Triangulation is a process of verification that increases validity by incorporating several viewpoints and methods" (Yeasmin & Rahman, 2012, p. 156). The extent of triangulation employed during the research effort was limited to match the available data and resultant analyses (See Figure 9).

Participants

The population for the quantitative survey design was comprised of PMI (Project Management Institute) members, affiliates, and project professionals residing in the state of Alaska. This particular group was chosen because they represented the project management profession in the state of Alaska. First of all, this group was comprised of individuals who practice project management as a profession. Secondly, these same individuals practice their profession in the state of Alaska, the Last Frontier. These two conditions satisfy the objectives of this exploratory research and the related research questions.

Project management professionals with varying degrees of experience and education hold membership with PMI or some PMI related group. These representatives

of the profession practice project leadership, work with project teams, and manage projects on behalf of their organizations. Furthermore, these members cover all six regions of Alaska including the Southcentral region, Interior region, Southeastern region, Southwestern region, Western region, and Arctic region (See Figure 14). At the time of the survey, Alaska's PMI chapter membership was at 548 members. The Alaska PMI president and membership coordinator agreed to distribute the survey to the entire Alaska PMI chapter membership. Other participants included project managers with professional status in other venues such as Alaska's professional engineer's society and active projects in the state of Alaska.

Figure 14: Six Regions of Alaska

The population for the qualitative grounded theory research design was comprised of project management and construction professionals working in the researcher's home region, Southcentral Alaska (See Figure 14). These representatives practice their craft in the heart of Alaska. Their experience leading projects, working with project teams, and combating Alaska's geography made them ideal candidates for discussing project management in the state of Alaska. A minimum population size of 20 persons was targeted to participate in interviews based on availability.

Data Collection

The quantitative survey design generated data that reflected the project manager's profile. The resultant profiles were fabricated from personal data including gender, race, and age. More importantly, the resultant profiles captured competencies including certifications, authentic leadership, emotional intelligence, and leadership style. Within these sections, additional columns were added to reflect the scoring associated with each of the corresponding instrument objectives. Lastly, the resultant profiles captured background information related to organizational culture and emphasis on project performance criteria. These profiles were used to address RQ1 thru RQ3.

The qualitative grounded theory research design generated data connecting both physical and human geography to project management in the state of Alaska. The source of data came from three sources: 1) Face-to-face interviews, 2) Field observations, and 3) Artifacts. The information collected from these sources was codified and systematically organized according to theme and topic. The level of detail and amount of information obtained from these sources were used to address RQ4.

Analytical Methods

The analysis of data was an important phase in the research process. The first step in the analysis of data was the tabulation and organization of information collected from the research. Phase 1 of the research yielded a substantial amount of quantitative data based on the survey design. Phase 2 of the research also yielded a substantial amount of qualitative data based on interviews, observations, and other artifacts.

The profiles obtained as a result of the survey design were tabulated in a spreadsheet. As noted earlier, data were organized based on the seven sections

previously outlined. In short, the spreadsheet was used to compute various aspects of leadership, emotional intelligence, organizational culture, and geography. Descriptive statistics were used to summarize survey data and describe the characteristics of the population. Overall scores, minimum, maximum, range, mean, and standard deviation were used to describe and summarize responses to the survey. A graphical representation of responses was also provided in some cases.

The information collected from the grounded theory design was transcribed and tabulated in a spreadsheet. Content analysis was employed to identify and recognize key elements apropos to the research topic. The tabulation was dependent on proper coding of information and categorization. The resultant spreadsheet was used to assess the impact of project management factors including but not limited to geography. Once again, descriptive statistics was used to summarize the data and describe the characteristics of the population. Overall scores, minimum, maximum, range, mean and standard deviation were used to describe and summarize the codified data. A graphical representation of responses was provided in some cases.

Leadership authenticity, decision-making style, emotional intelligence, organizational culture, and geography were considered independent variables that affect project management strategy and project performance. In which case, project management strategy and project performance were dependent variables. The degree to which these independent variables influenced project management outcomes was of great interest to the researcher. A one-way analysis of variance (ANOVA) was used to analyze each of the grouping variables in the QUAN-Qual research. A bivariate comparison of

means (Correlation) was used to analyze the geographical factors and interviewees in the QUAL-Quan research.

In summary, the analytical methods employed after the collection and organization of data led to findings that describe what makes a project manager lean toward or embrace a particular strategy in the state of Alaska. The following section presents these findings in a logical manner beginning with the quantitative discoveries associated with the exploratory research. A descriptive and inferential component comprise the quantitative discoveries made as a result of the surveys. Likewise, a descriptive and inferential component comprise the qualitative discoveries made as a result of the interviews. The combination of these findings culminated in a powerful conclusion regarding project environments, project strategies, and project manager profiles.

CHAPTER IV

FINDINGS AND CONCLUSION

Introduction

The results of research in the areas of leadership, emotional intelligence, organizational culture, geography, and the impacts of these factors on project managers in the state of Alaska are presented in this section. First of all, project managers are leaders who are tasked with leading a project team toward the finish line. Their leadership has a direct impact on the project journey and project destination. Secondly, project managers interact with people, internal and external stakeholders, on a daily basis. Their ability to form interpersonal relationships, their emotional intelligence, has a direct impact on project management. Third, organizational culture including the politics, norms, values, and assumptions guiding the organization, has a direct impact on project management and strategy. Lastly, geography, both physical and human geography, has an impact on project management and strategy. Understanding these impacts is the driver of this exploratory research effort. Project managers in the state of Alaska were the primary focus of this research as it relates to leadership, emotional intelligence, organizational culture, and geography.

The participants in this research effort had an affiliation with the Project Management Institute (PMI) in the state of Alaska. Some were members of PMI, some were beneficiaries of PMI training, some were officers of the PMI Alaska Chapter, and others were simply working with or under the authority of project managers who were

PMI certified. In any case, the participants were asked to provide background information including their level of experience and training.

This chapter presents the findings and conclusions concerning project management impact factors and project management strategy in this exploratory study. The PMI project management process includes a planning phase and an implementation phase for project execution. The process is merely a starting point for project managers since every project is unique. The strategy or approach to project management is dependent on the project manager and their perceptions concerning project objectives. "At the core of project management is the need to balance the time, money, and scope of the project. Under this 'triple constraint,' project managers figure out which tasks are crucial and when they need to be done" (DiVincenzo, 2006, p. 20). Thus, strategy regarding project success criteria is an important consideration for how projects are developed and implemented. Once again, this is dependent on the project manager. Their leadership, emotional intelligence, organizational culture, and geographical setting all had an impact on project management.

The first factor that was explored in this research was leadership. Leadership covers a lot of ground including guiding and directing project teams, coaching and developing team members, influencing others, making important decisions, and motivating and inspiring subordinates in pursuit of organizational objectives. The relevant research question, RQ1, was as follows: *To what extent did leadership impact project strategy and performance in Alaska?* Leadership authenticity and leadership decision making style are two important aspects of leadership that were considered in this research. The Authentic Leadership Questionnaire (ALQ) and the Jerrell/Slevin

Management instrument were administered via survey to evaluate project manager characteristics in this area.

The second factor that was explored in this research was emotional intelligence. Emotional intelligence is an indicator of one's self awareness and one's ability to build relationships with others. The relevant research question, RQ2, was as follows: *To what extent did emotional intelligence impact project strategy and performance in Alaska?* An Emotional Intelligence (EI) quotient can be measured using a variety of instruments. The TEIQue-SF was administered via survey to evaluate project manager characteristics in this area.

The third factor that was explored in this research was organizational culture. Organizational culture is comprised of many elements including organizational leadership, management of employees, organizational glue, strategic emphases, criteria of success, and dominant characteristics (Cameron & Quinn, 2011). The relevant research question, RQ3, was as follows: *To what extent did organizational culture impact project strategy and performance in Alaska?* Four organizational culture types were possible based on the OCAI.

The fourth and final factor that was explored in this research was geography. Physical geography and human geography are two different aspects of geography that were considered during the research effort. Physical geography includes those tangible elements of geography such as landforms and weather. Human geography tends to include intangible elements such as education and human migration. The relevant research question, RQ4, was as follows: *To what extent did geography impact project*

strategy and performance in Alaska? The geographical characteristics of Alaska are both unique and challenging from a project management perspective.

The results of the previously mentioned surveys were tested using IBM's Statistical Package for Social Sciences (SPSS) and summarized in the findings. All statistical tests used an alpha level of .05 which is a common alpha level for this type of research.

Findings

The findings associated with this research effort are summarized in two phases based on the previously described mixed methods design (see Figure 9). The Phase 1 strategy, convergent parallel QUAN-Qual strategy, emphasized quantitative methods primarily based on an 83-question survey. The Phase 2 strategy, convergent parallel QUAL-Quan strategy, emphasized qualitative methods based on a grounded theory approach including interviews, observations, and artifacts.

Quantitative Descriptive Discoveries

The researcher used a survey comprised of 83 questions for the Convergent Parallel QUAN-Qual Strategy (see Figure 12). Questions 1 thru 7 were general background questions regarding gender, age, ethnic origin, experience, education, location, and certification. Table 1 summarizes the responses to questions 1 thru 4. Table 2 summarizes the responses to questions 5 thru 7. Based on these tables, 55% of respondents were between the ages of 35 and 54, 57% of respondents had more than 10 years of experience, 80% of respondents had a college education, and 78% of respondents had some type of project engineering/construction related certification. In

short, this group of respondents could be described as mature professionals in their field of expertise.

Table 1

General Background Questions (Primary)

Q1 - Gender

Combined	Female	Male
n = 225	n = 37	n = 188
(100%)	(16.4%)	(83.6%)

Q2 – Age (years)

Combined	18-24	25-34	35-44	45-54	55-64	65 and up
n = 225	n = 1	n = 30	n = 63	n = 62	n = 52	n = 17
(100%)	(.4%)	(13.3%)	(28%)	(27.6%)	(23.1%)	(7.6%)

Q3 – Ethnic Origin

Combined	White or Caucasian	Black or African American	American Indian or Alaska Native	Hispanic or Latino	Native Hawaiian or Pacific Islander	Asian	Other
n = 223	n = 184	n = 4	n = 10	n = 13	n = 1	n = 4	n = 7
(100%)	(82.5%)	(1.8%)	(4.5%)	(5.8%)	(.5%)	(1.8%)	(3.1%)

Q4 – Experience (years)

Combined	Less than 2	2 to 5	6 to 10	11 to 15	16 to 20	21 to 25	More than 25
n = 225	n = 18	n = 38	n = 41	n = 44	n = 36	n = 20	n = 28
(100%)	(8%)	(16.9%)	(18.2%)	(19.6%)	(16%)	(8.9%)	(12.4%)

Note. Overall, the survey participants numbered 226 persons. But not all participants were respondents to every question. Thus, the percentages noted in the table are based on actual respondents (not participants).

Table 2

General Background Questions (Secondary)

Q5 – Education						
Combined	None	High School or GED	Associate Degree	Bachelor's Degree	Master's Degree	Doctorate Degree
n = 224 (100%)	n = 1 (.5%)	n = 43 (19.2%)	n = 17 (7.6%)	n = 98 (43.8%)	n = 63 (28.1%)	n = 2 (.9%)

Q6 – Location (Alaska)							
Combined	South-Central	Interior	South-Eastern	South-Western	Western	Arctic	Other
n = 223 (100%)	n = 191 (85.7%)	n = 5 (2.2%)	n = 3 (1.4%)	n = 0 (0%)	n = 0 (0%)	n = 3 (1.4%)	n = 21 (9.4%)

Q7 – Certifications							
Combined	PMI PMP	PMI (Other)	PE	API	Lean Six Sigma	HSE	Other
n = 176 (100%)	n = 53 (30.1%)	n = 7 (4%)	n = 47 (26.7%)	n = 13 (7.4%)	n = 33 (18.8%)	n = 19 (10.8%)	n = 85 (48.3%)

Note. Overall, the survey participants numbered 226 persons. But not all participants were respondents to every question. Thus, the percentages noted in the table are based on actual respondents (not participants).

Survey participants were asked to identify a home office location in the state of Alaska. Figure 9 illustrates the geographic divisions within the state of Alaska. More than 85% of respondents identified Southcentral Alaska as their home office. For reference, Southcentral Alaska includes Anchorage, Wasilla, and Kenai. Southeastern Alaska includes Ketchikan and Juneau. Southwestern Alaska includes Kodiak and the

Aleutian Islands. Western Alaska includes Nome and Bethel. Interior Alaska includes Fairbanks, North Pole, and Delta Junction. Arctic Alaska includes Barrow (Utqiagvik) and Deadhorse (Prudhoe Bay). Southwestern and Western Alaska were not identified as a home office by any of the respondents. Over 9% of respondents selected 'other' as their home office which means their office could be outside the state of Alaska.

The second level of inquiry in the survey had to do with soliciting opinions. Questions 8 thru 14 solicited opinions regarding leadership, teamwork, emotional intelligence, organizational culture, geography, and project management strategy. Table 3 summarizes the responses to these questions. First, over 93% of respondents felt that teamwork had more than a moderate effect on project management. Second, over 90% of respondents felt that leadership had more than a moderate effect on project management. Third, over 84% of respondents felt that organizational culture had more than a moderate effect on project management. Fourth, over 69% of respondents felt that emotional intelligence had more than a moderate effect on project management. And fifth, over 59% felt that geography had more than a moderate effect on project management. In short, more than half of the survey respondents felt that all five of these factors had a severe or major impact on project management in the state of Alaska.

Table 3

Opinion Questions

Q8 – Rate the impact "leadership" has on project management in the state of Alaska?				
Little to no impact (1)	Mild impact (2)	Moderate impact (3)	Severe impact (4)	Major or extreme impact (5)
n = 1	n = 4	n = 16	n = 86	n = 116
(.5%)	(1.8%)	(7.2%)	(38.6%)	(52%)

Q9 – Rate the impact "teamwork" has on project management in the state of Alaska?				
Little to no impact (1)	Mild impact (2)	Moderate impact (3)	Severe impact (4)	Major or extreme impact (5)
n = 0	n = 4	n = 11	n = 68	n = 140
(0%)	(1.8%)	(4.9%)	(30.5%)	(62.8%)

Q10 – Rate the impact "emotional intelligence" has on project management in the state of Alaska?				
Little to no impact (1)	Mild impact (2)	Moderate impact (3)	Severe impact (4)	Major or extreme impact (5)
n = 3	n = 6	n = 60	n = 93	n = 62
(1.3%)	(2.7%)	(26.8%)	(41.5%)	(27.7%)

Note. Overall, the survey participants numbered 226 persons. But not all participants were respondents to every question. Thus, the percentages noted in the table are based on actual respondents (not participants).

Table 3 Continued

Q11 – Rate the impact "organizational Culture" has on project management in the state of Alaska?

Little to no impact (1)	Mild impact (2)	Moderate impact (3)	Severe impact (4)	Major or extreme impact (5)
n = 0	n = 4	n = 31	n = 101	n = 88
(0%)	(1.8%)	(13.8%)	(45.1%)	(39.3%)

Q12 – Rate the impact "geography" has on project management in the state of Alaska?

Little to no impact (1)	Mild impact (2)	Moderate impact (3)	Severe impact (4)	Major or extreme impact (5)
n = 11	n = 30	n = 50	n = 60	n = 73
(4.9%)	(13.4%)	(22.3%)	(26.8%)	(32.6%)

Q13 – Which of the following are you most successful with during the planning phase?

Managing Scope	Managing Schedule	Managing Budget
n = 148	n = 52	n = 24
(66.1%)	(23.2%)	(10.7%)

Q14 – Which of the following are you most successful with during the implementation phase?

Managing Safety	Managing Quality	Managing Customer Satisfaction
n = 43	n = 79	n = 102
(19.2%)	(35.2%)	(45.5%)

Note. Overall, the survey participants numbered 226 persons. But not all participants were respondents to every question. Thus, the percentages noted in the table are based on actual respondents (not participants).

Projects are typically managed in phases. The first phase, the planning phase, is concerned with defining scope, determining timelines, and establishing budgets. Based on the survey, more than 65% of respondents felt they were most successful with defining project scope; only 10% of respondents felt they were most successful with managing project budgets. The second phase, the implementation phase, is concerned with safe work execution, quality, and customer satisfaction. Based on the survey, more than 45% of respondents felt they were most successful with managing customer satisfaction; less than 20% of respondents felt they were most successful with managing safety.

The third section of the survey referenced three separate instruments for measuring emotional intelligence, leadership decision making style and subordinate input, and authentic leadership. Each instrument was identified in the survey and the corresponding Likert scale was clearly associated with the instrument. The first factor to be evaluated in the survey was emotional intelligence.

Emotional intelligence is an important project manager characteristic that can be measured on several levels. Questions 15 thru 44 were based on the TEIQue-SF instrument which is used to measure emotional intelligence. See Table 4. Each of the questions are based on a 7-point Likert scale. Scale as follows: 1 = Completely disagree, 7 = Completely agree; 2 thru 6 are between 'completely disagree' and 'completely agree' but undefined by the instrument. The responses to these 30 questions were used to evaluate respondents in four distinct areas that comprise the emotional intelligence quotient (EI). Appendix A provides a description of each area.

Table 4

Emotional Intelligence Questions

Questions 15 thru 44
15 – Expressing my emotions with words is not a problem for me.
16 – I often find it difficult to see things from another person's viewpoint.
17 – On the whole, I'm a highly motivated person.
18 – I usually find it difficult to regulate my emotions.
19 – I generally don't find life enjoyable.
20 – I can deal effectively with people.
21 – I tend to change my mind frequently.
22 – Many times, I can't figure out what emotion I'm feeling.
23 – I feel that I have a number of good qualities.
24 – I often find it difficult to stand up for my rights.
25 – I'm usually able to influence the way other people feel.
26 – On the whole, I have a gloomy perspective on most things.
27 – Those close to me often complain that I don't treat them right.
28 – I often find it difficult to adjust my life according to circumstances.
29 – On the whole, I'm able to deal with stress.
30 – I often find it difficult to show my affection to those close to me.
31 – I'm normally able to "get into someone's shoes" and experience their emotions.
32 – I normally find it difficult to keep myself motivated.
33 – I'm usually able to find ways to control my emotions when I want to.
34 – On the whole, I'm pleased with my life.
35 – I would describe myself as a good negotiator.

Note. TEIQue-SF, Petrides, K.V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire.

Table 4 Continued

Questions 15 thru 44
36 – I tend to get involved in things I later wish I could get out of.
37 – I often pause and think about my feelings.
38 – I believe I'm full of personal strengths.
39 – I tend to "back down" even if I know I'm right.
40 – I don't seem to have any power at all over other people's feelings.
41 – I generally believe that things will work out fine in my life.
42 – I find it difficult to bond well even with those close to me.
43 – Generally, I'm able to adapt to new environments.
44 – Others admire me for being relaxed.

Note. TEIQue-SF, Petrides, K.V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire.

The four categories that comprise emotional intelligence include well-being, self-control, emotionality and sociability. Appendix B provides additional description of components that comprise each of these emotional intelligence areas. The overall maximum score for any one of the categories comprising emotional intelligence was 7.0 and the maximum score for the emotional intelligence quotient (EI) was 7.0. Table 5 provides a summary of values for each of the categories based on the formulas provided with the instrument. On average, each of the categories surpassed the mid-range value of 3.5. On average, the highest category for respondents was well-being (6.2 out of 7); the lowest category for respondents was sociability (5.3 out of 7).

Table 5

Emotional Intelligence Components and Measurements

n = 226	Well-being	Self-control	Emotionality	Sociability	EI Quotient
OVERALL	7.0	7.0	7.0	7.0	7.0
RANGE	3.2	3.2	3.7	4.5	2.5
MIN	3.8	3.8	3.3	2.5	4.0
MAX	7.0	7.0	7.0	7.0	6.5
MEAN	6.2	5.4	5.4	5.3	5.4
MEAN (%)	88.6	77.1	77.1	75.7	77.1
SD	.63	.75	.74	.86	.50

Note. TEIQue-SF, Petrides, K.V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire.

Leadership decision-making style and subordinate input is another important project manager characteristic that can be measured. Questions 45 thru 64 were based on the Jerrell/Slevin Management instrument which is used to measure leadership style (authority) in the area of decision making and subordinate input (stakeholder inclusion). See Table 6. Each of the questions are based on a 5-point Likert scale. Scale as follows: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree. The responses to these 20 questions are used to evaluate a leader's decision-making style and their interaction with team members.

Table 6

Leadership Decision Making and Subordinate Input Questions

Questions 45 thru 64
45 – I don't like it when other disagree with me.
46 – I like quick results.
47 – I find it hard to accept others decisions.
48 – I have a strong ego.
49 – Once I make up my mind, I stick to it.
50 – I enjoy giving orders.
51 – The work group should determine its own vacation schedule (reverse scale).
52 – The work group should determine its own work schedule (reverse scale).
53 – I feel comfortable being placed in a powerful position.
54 – I like working in a group situation (reverse scale).
55 – It is easier to make a decision in a group.
56 – Groups usually take up more time than they are worth (reverse scale).
57 – I often ask for information from subordinates.
58 – Groups give a deeper analysis of a problem.
59 – I often use what subordinates have to say.
60 – No one else can know as much about the problem as I do (reverse scale).
61 – I usually make my decision before calling a staff meeting (reverse scale).
62 – Better decisions are made in group situations.
63 – A group is no better than its best member (reverse scale).
64 – Group decisions are the best.

Note. Jerrell/Slevin Management Instrument. Dimensions and Teamwork in Project Management.

The two categories that comprise leadership decision-making style and team interaction are labeled D for *decision* and I for *input* according to the instrument. The scores for each of these categories is also compared to a baseline assessment provided with the instrument which enables ranking according to percentile. Appendix C provides a scoring table that corresponds with percentile. Table 7 provides a summary of values for each of the categories based on the formulas provided with the instrument. A low score/percentile on D (Decision) means that decisions are made by the group, while a high score/percentile on D (Decision) means that decisions are made solely by the leader. Similarly, a low score/percentile on I (Input) means the subordinate group's information input to decisions is low, while a high score/percentile on I (Input) means the subordinate group's information input to decisions is high. On average, respondents ranked well below the 50th percentile for D (Decision) which means that decisions are heavily influenced by the group. Respondents ranked above the 50th percentile for I (Input) which means that subordinate group information input to the decision-making process is above average. Appendix D provides a management grid used to plot scores for decision authority and subordinate input.

Table 7

Leadership Decision Making Components and Measurements

n = 226	Decision (Score)	Decision (Percentile)	Input (Score)	Input (Percentile)
OVERALL	100	100	100	100
RANGE	29.0	98.0	25.0	98.0
MIN	13.0	1.0	25.0	2.0
MAX	42.0	99.0	50.0	100.0
MEAN	28.7	32.1	37.0	58.0
MEAN (%)	28.7	32.1	37.0	58.0
SD	4.70	26.41	5.55	34.53

Note. Jerrell/Slevin Management Instrument. Dimensions and Teamwork in Project Management.

Based on the survey and the management grid, the average respondent placed in the consensus manager quadrant.

Authentic leadership is another important project manager characteristic that can be measured. Questions 65 thru 80 were based on the ALQ instrument (ALQ Version 1.0 Self) which is used to measure authentic leadership and determine an authentic leadership (AL) quotient. See Table 8. Each of the questions are based on a 5-point Likert scale. Scale as follows: 0 = Not at all, 1 = Once in a while, 2 = Sometimes, 3 = Fairly often, 4 = Frequently, if not always. The responses to these 16 questions were used to evaluate respondents in four distinct areas that comprise authentic leadership. Appendix E provides a description of the four authentic leadership areas.

Table 8

Authentic Leadership Questions

Questions 65 thru 80
65 – As a leader I say exactly what I mean.
66 – As a leader I admit mistakes when they are made.
67 – As a leader I …
68 – As a leader I …
69 – As a leader I …
70 – As a leader I …
71 – As a leader I …
72 – As a leader I …
73 – As a leader I …
74 – As a leader I …
75 – As a leader I …
76 – As a leader I …
77 – As a leader I …
78 – As a leader I …
79 – As a leader I …
80 – As a leader I show I understand how specific actions impact others.

Note. The actual number of questions in this instrument is 16. Conditions of instrument use limited the number of questions reproduced in this paper to 3 sample items. Copyright 2007 Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa. Published by Mind Garden. (Avolio, Gardner & Walumbwa, 2007).

The four categories that comprise authentic leadership include transparency, moral-ethical, balanced processing and self-awareness. The maximum score for each of the categories is as follows: transparency (25), moral-ethical (20), balanced processing (15), self-awareness (20), authentic leadership quotient (20). Table 9 provides a

summary of values for each of the categories based on the formulas provided with the instrument. On average, each of the categories surpassed the mid-range values of 12.5, 10.0, 7.5, 10.0, and 10.0 respectively. On average, the highest category for respondents was moral-ethical (67.8%), and the lowest category was self-awareness (59.8%). The four categories were well balanced which resulted in an authentic leadership quotient of 12.8 (63.8%).

Table 9

Authentic Leadership Components and Measurements

n = 226	Transparency	Moral-Ethical	Balanced Processing	Self-Awareness	AL Quotient
OVERALL	25.0	20.0	15.0	20.0	20.0
RANGE	11.0	9.0	6.0	9.0	7.2
MIN	9.0	7.0	6.0	7.0	8.8
MAX	20.0	16.0	12.0	16.0	16.0
MEAN	15.7	13.6	9.8	12.0	12.8
MEAN (%)	62.7	67.8	65.5	59.8	63.8
SD	2.46	2.06	1.49	1.96	1.58

Project performance criteria are the foundation of project strategy. Question 81 was used to ascertain the project managers ranking of project performance criteria for the project planning phase. The results pertaining to this question are provided in Table 10.

Table 10

Project Planning Performance Strategy – Order of Importance

Project Planning – Most Important Criterion				
	Combined	Scope	Schedule	Budget
Respondents	n = 224	n = 169	n = 19	n = 36
Percentage	100%	75.5%	8.5%	16.0%

Project Planning – Important Criterion				
	Combined	Scope	Schedule	Budget
Respondents	n = 224	n = 30	n = 82	n = 112
Percentage	100%	13.4%	36.6%	50.0%

Project Planning – Least Important Criterion				
	Combined	Scope	Schedule	Budget
Respondents	n = 224	n = 25	n = 123	n = 76
Percentage	100%	11.1%	54.9%	34.0%

Note. These criteria comprise what is typically the focus of a project planning effort.

The scope of a project involves all project objectives and deliverables determined by the stakeholders and agreed to by the project manager. Based on the survey, 75% of respondents identified 'scope' as one of the most important project criteria to be considered during the planning phase (see Figure 15). Half of the respondents identified 'budget' as an important project criterion. More than half of the respondents identified 'schedule' as the least important project criterion.

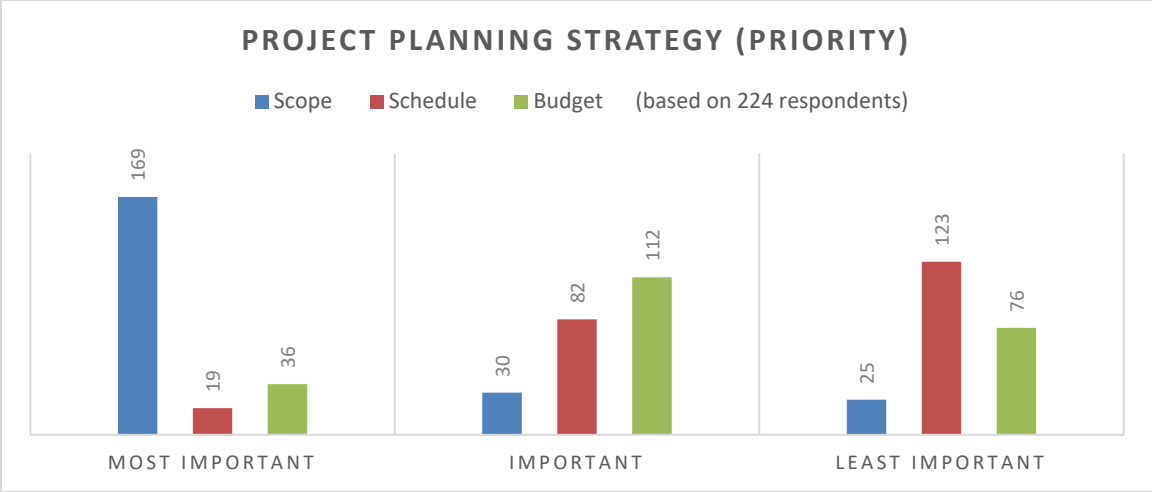


Figure 15. Comparison of Project Planning Strategies (Order of Importance)

As previously noted, project performance criteria are the foundation of project strategy. Question 82 was used to ascertain the project managers ranking of project performance criteria for the project implementation phase. The results pertaining to this question are provided in Table 11.

The safety aspect of project management is an important consideration that entails physical safety, security, and environmental protection. More than 75% of respondents identified 'safety' as the most important project criterion during the project implementation phase (see Figure 16). Just over 55% of respondents identified *quality* as the most important project criterion during the project implementation phase. Nearly 55% of respondents identified *customer satisfaction* as the least important project criterion during the project implementation phase. The project owner and the organization they represent are generally identified as the customer. However, the customer can be any internal or external stakeholder that is affected by the project or able to affect the project.

Table 11

Project Implementation Performance Strategy – Order of Importance

Project Implementation – Most Important Criterion				
	Combined	Safety	Quality	Customer Satisfaction
Respondents	n = 224	n = 176	n = 23	n = 25
Percentage	100%	78.6%	10.3%	11.1%

Project Implementation – Important Criterion				
	Combined	Safety	Quality	Customer Satisfaction
Respondents	n = 224	n = 24	n = 124	n = 76
Percentage	100%	10.7%	55.3%	34.0%

Project Implementation – Least Important Criterion				
	Combined	Safety	Quality	Customer Satisfaction
Respondents	n = 224	n = 24	n = 77	n = 123
Percentage	100%	10.7%	34.4%	54.9%

Note. These criteria comprise what is typically the focus of a project execution effort.

Figure 16. Comparison of Project Implementation Strategies (Order of Importance)

The final question on the survey, question 83, asked the respondents to select an organizational culture that reflected their current organization; a description of four organizational cultures as defined in the OCAI (Organizational Culture Assessment Inventory) were presented in the survey. This question along with a description of the four organizational cultures can be referenced in Appendix F. The results of responses to this question can be seen in Table 12.

Table 12

Organizational Culture - Identification

	Combined	Collaborative Culture	Creative Culture	Controlling Culture	Competitive Culture
Respondents	n = 225	n = 130	n = 25	n = 34	n = 36
Percentage (%)	100	57.8	11.1	15.1	16.0

Note. Overall, the survey participants numbered 226 persons. But not all participants were respondents to every question. Thus, the percentages noted in the table are based on actual respondents (not participants).

Over half of the respondents identified their organizations as having a collaborative culture (see Figure 17). A collaborative culture functions like an extended

family where information is freely shared. Commitment and personal development are hallmarks of this culture. The glue that holds this culture together is loyalty and tradition. Teamwork and participation are encouraged. The project manager functions as a flexible mediator in this culture. In contrast, just over 10% of the respondents identified their organizations as having a creative culture. A creative culture is dynamic and entrepreneurial. Taking risks and being on the leading edge are hallmarks of this culture. The glue that holds this culture together is commitment to experimentation and innovation. Individual initiative and freedom are encouraged. The project manager functions as an independent mediator in this culture.

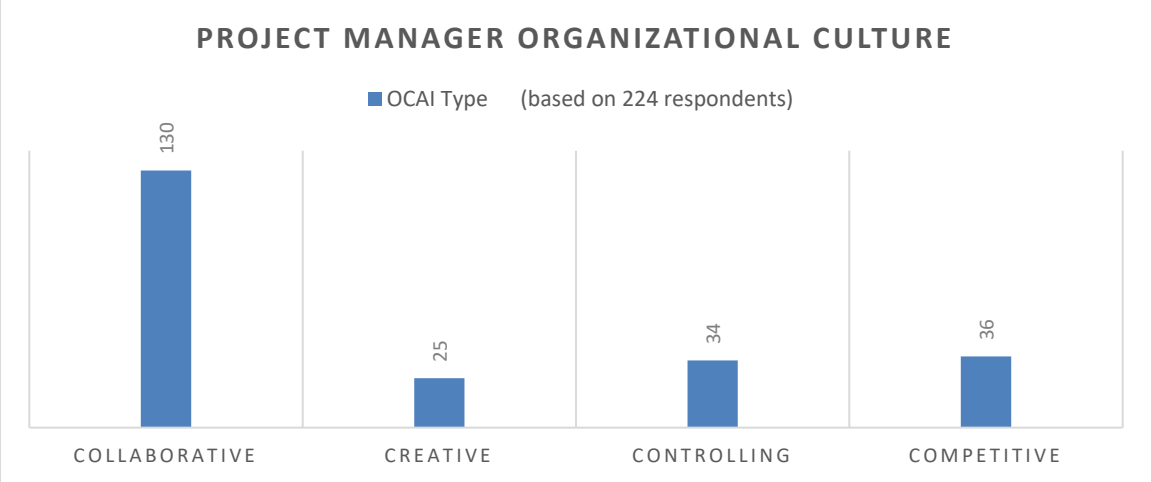


Figure 17. Project Management Organizational Culture Composition

Additional analyses were conducted using analysis of variance (ANOVA) to understand the impacts of these variables on project management strategy. The profile of the project manager was also made clearer as a result of these analyses and subsequent discoveries.

Quantitative Inferential Discoveries

The ANOVA was accomplished by creating categories within the project planning phase and project implementation phase. For instance, the three categories that comprise the project planning phase are scope, schedule, and budget. Since project strategy includes the emphasis placed on each of these important project performance criteria, a comparison of these categories to emotional intelligence, leadership decision making style, authentic leadership, and organizational culture was a valid approach. As such, multiple ANOVAs were conducted based on these categories against each of the factors previously discussed.

Project Planning Phase.

The project planning phase categories were the first ones to be analyzed. The analysis started with scope, proceeded to schedule, and finished with budget.

scope analysis.

Scope is an important part of the planning phase. Table 13 is a high-level summary of the findings based on the project planning phase category, scope.

Table 13

Project Planning Phase – Scope Strategy (Emphasis on Scope)

ANOVA Summary

	Most Important	Important	Least Important
	n = 169	n = 30	n = 25
	M/SD	*M/SD*	*M/SD*
Emotional Intelligence	5.42/.52	5.31/.48	5.37/.41
Well-being	6.24/.62	6.04/.66	6.15/.64
Self-control	5.46/.75	5.36/.71	5.45/.80
Emotionality	5.47/.75	5.31/.69	5.46/.69
Sociability	5.32/.87	5.27/.94	5.25/.72
Authentic Leadership	12.85/1.56	12.67/1.73	12.15/1.42
Transparency	15.74/2.40	15.70/2.71	15.2/2.63
Moral-ethical	13.68/2.05	13.53/1.96	12.68/2.15
Balanced processing	9.98/1.45 *	9.60/1.54	9.12/1.48 *
Self-awareness	12.02/1.98	11.87/2.16	11.60/1.63
Decision Making	NA	NA	NA
Leader Authority	28.48/4.70	29.43/4.41	28.88/5.10
Leader Authority (%)	31.31/25.60	35.20/28.11	33.48/30.29
Subordinate Input	37.49/5.39 **	36.87/6.29	34.16//5.02 **
Subordinate Input (%)	61.30/33.57 **	53.73/36.57	41.00/34.27 **

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

* A difference in *balanced processing* was discovered between those who placed high emphasis on scope and those who placed low emphasis on scope. F = 4.213, df = 2, p = .016. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked scope highest, scored highest in balanced processing, M = 9.98,

SD = 1.45. Those project managers who ranked scope lowest, scored lowest in balanced processing, M = 9.12, SD = 1.48.

** A difference in *subordinate input* was discovered between those who placed high emphasis on scope and those who placed low emphasis on scope. F = 4.024, df = 2, p = .019. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked scope highest, scored highest in subordinate input, M = 37.49, SD = 5.39. Those project managers who ranked scope lowest, scored lowest in subordinate input, M = 34.16, SD = 5.02. Likewise, a difference in 'subordinate input percentile' was discovered between those who placed high emphasis on scope and those who placed low emphasis on scope. F = 4.144, df =2, p = .017. Those project managers who ranked scope highest, placed in a higher percentile for subordinate input, M = 61.30, SD = 33.57; they placed in the 61st percentile for subordinate input. Those project managers who ranked scope lowest, scored lowest in subordinate input, M = 41.00, SD = 34.27; they placed in the 41st percentile for subordinate input.

Those respondents who ranked scope as the most important project strategy criterion scored higher on average in each of the emotional intelligence categories compared to those who ranked scope as least important or just important (see Figure 18).

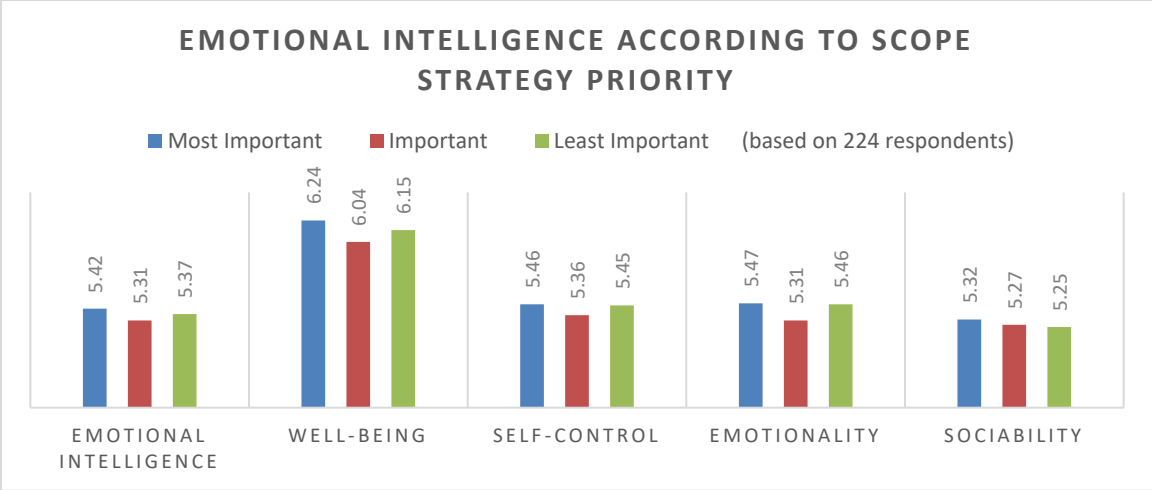


Figure 18. Emotional Intelligence vs. Scope Strategy Ranking

Those respondents who ranked scope as the most important project strategy criterion scored higher on average in each of the authentic leadership categories compared to those who ranked scope as least important or just important (see Figure 19).

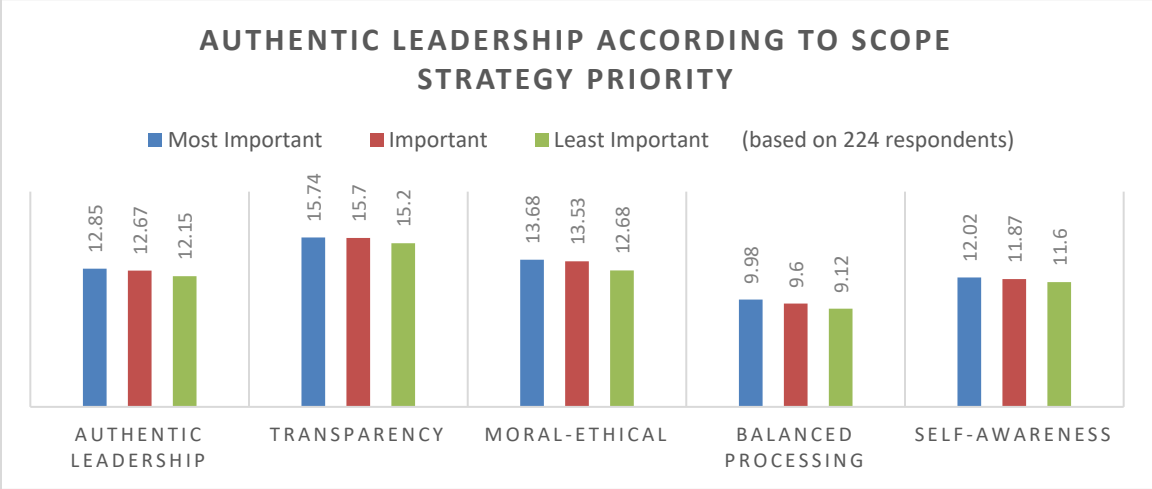


Figure 19. Authentic Leadership vs. Scope Strategy Ranking

Those respondents who ranked scope as the most important project strategy criterion scored lower on average in *leader authority* and higher on average in *subordinate input* compared to those who ranked scope as least important or just important (see Figure 20).

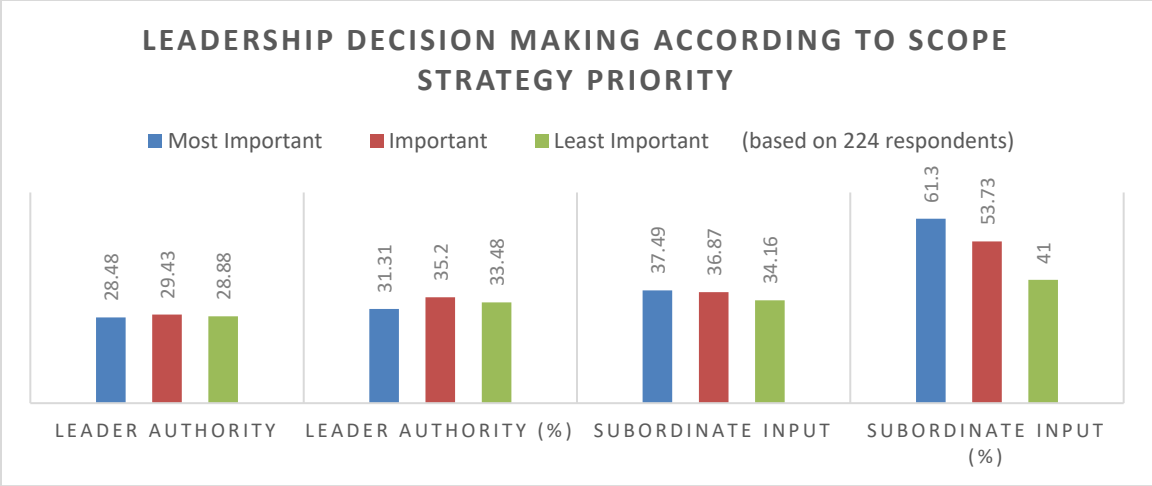


Figure 20. Leadership Decision Making vs. Scope Strategy Ranking

The factor, organizational culture, was also examined for the scope category. The greatest percentage of those who rank scope as the most important project planning criterion were in the controlling culture (82.4%). Next was the collaborative culture; over 78% of these individuals ranked scope as the most important project planning criterion. The creative culture was third with 76% supporting scope as the most important. Last, the competitive culture had 58% supporting scope as the most important project planning criterion. Table 14 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 14

Organizational Culture – Scope Strategy (Emphasis on Scope)

Descriptive Summary

	Most Important	Important	Least Important
	n = 169	n = 30	n = 25
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	100/78.1	13/10.2	15/11.7
Creative	20/76.9	4/15.4	2/7.7
Controlling	28/82.4	5/14.7	1/2.9
Competitive	21/58.3	8/22.2	7/19.5

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three scope rankings. This test was intended to test the probability of independence for the data obtained. The test showed χ^2 (6, N = 224) = 9.55. Thus, there was no relationship between organizational culture and scope ranking (strategy). Furthermore, there was no correlation based on the resultant Cramer's V (6, N = 224) = .15

schedule analysis.

Schedule is an important part of the planning phase. Table 15 is a high-level summary of the findings based on the project planning phase category, schedule.

Table 15

Project Planning Phase – Schedule Strategy (Emphasis on Schedule)

ANOVA Summary

	Most Important	Important	Least Important
	n = 19	n = 82	n = 123
	M/SD	*M/SD*	*M/SD*
Emotional Intelligence	5.37/.45	5.37/.52	5.42/.49
Well-being	6.11/.67	6.21/.60	6.21/.64
Self-control	5.49/.88	5.38/.79	5.48/.71
Emotionality	5.43/.68	5.42/.72	5.46/.76
Sociability	5.22/.66	5.26/.93	5.34/.85
Authentic Leadership	11.86/1.63 *	12.82/1.48 *	12.84/1.61 *
Transparency	14.74/2.40	15.77/2.380	15.76/2.51
Moral-ethical	12.16/2.29 *	13.73/1.85 *	13.64/2.10 *
Balanced processing	9.26/1.66	9.95/1.40	9.85/1.51
Self-awareness	11.32/1.97	11.87/1.95	12.11/1.96
Decision Making	NA	NA	NA
Leader Authority	28.94/5.16	28.32/4.82	28.83/4.57
Leader Authority (%)	32.84/29.25	30.88/27.28	32.75/25.55
Subordinate Input	35.00/6.33	37.46/5.46	37.06/5.47
Subordinate Input (%)	46.79/40.12	60.27/33.26	58.26/34.42

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

* A difference in *authentic leadership quotient* was discovered between those who placed high emphasis, medium emphasis and low emphasis on schedule. F = 3.377, df = 2, p = .036. A post hoc tukey test was ran to ascertain the difference. Those project managers who ranked schedule highest, scored lowest in authentic leadership quotient, M = 11.86,

SD = 1.63. Those project managers who ranked schedule lowest, scored highest in authentic leadership quotient, M = 12.84, SD = 1.61, and those who ranked schedule moderately, scored moderately in authentic leadership quotient, M = 12.82, SD = 1.61. There was also a difference in 'moral ethical' between those who placed high emphasis, medium emphasis and low emphasis on schedule. F = 4.933, df = 2, p = .008. A post hoc tukey test was ran to ascertain the difference. Those project managers who ranked schedule highest, scored lowest in moral-ethical, M = 12.16, SD = 2.29. Those project managers who ranked schedule lowest, scored moderately in moral-ethical, M = 13.64, SD = 2.10, and those who ranked schedule moderately, scored highest in moral-ethical, M = 13.73, SD = 1.85.

Those respondents who ranked schedule as the most important project strategy criterion scored lower on average in well-being, sociability and overall EI compared to those who ranked schedule as least important or just important (see Figure 21).

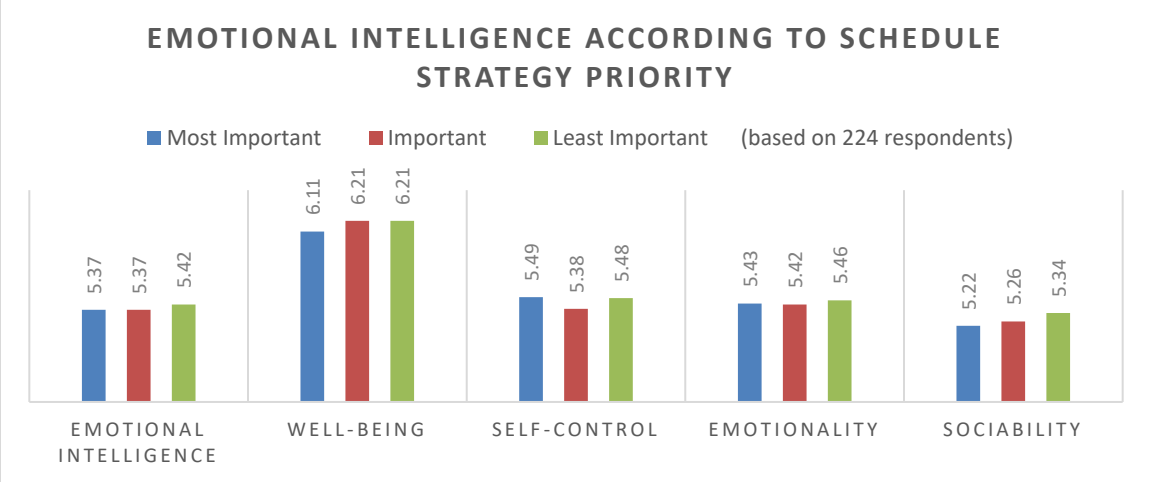


Figure 21. Emotional Intelligence vs. Schedule Strategy Ranking

Those respondents who ranked schedule as the most important project strategy criterion scored lower on average in each of the authentic leadership categories compared to those who ranked schedule as least important or just important (see Figure 22).

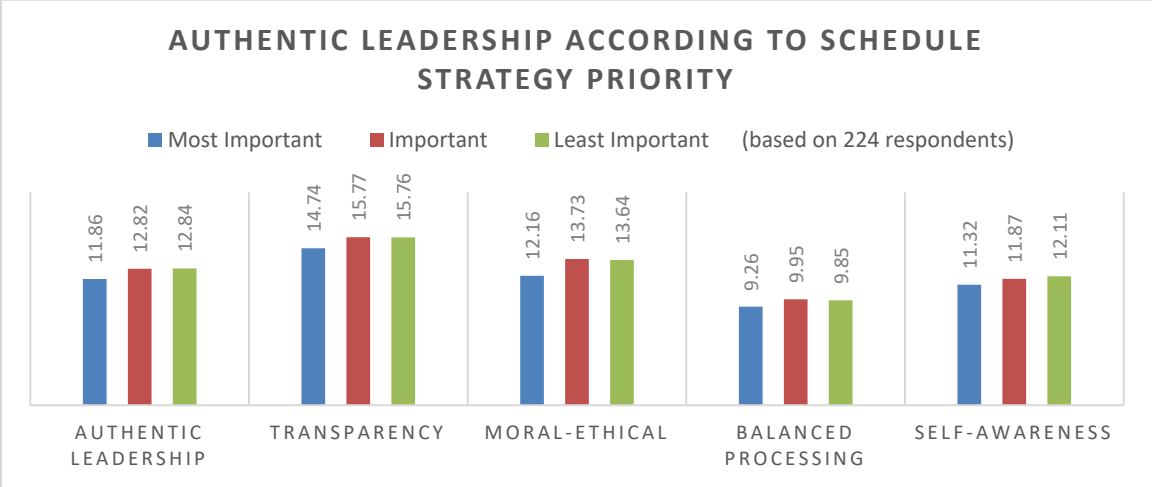


Figure 22. Authentic Leadership vs. Schedule Strategy Ranking

Those respondents who ranked schedule as the most important project strategy criterion scored higher on average in *leader authority* and lower on average in *subordinate input* compared to those who ranked schedule as least important or just important (see Figure 23).

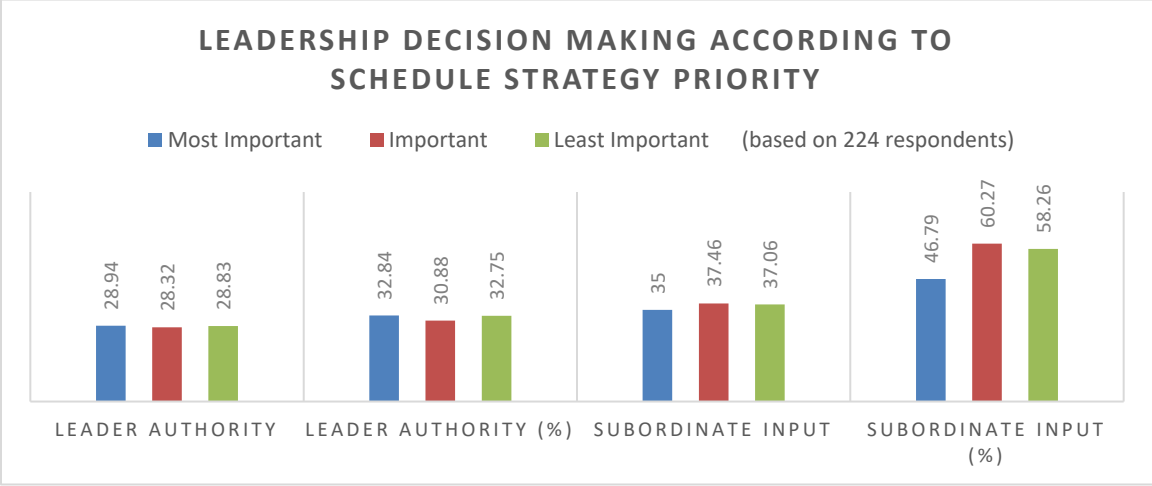


Figure 23. Leadership Decision Making vs. Schedule Strategy Ranking

The factor, organizational culture, was examined for the schedule category. Less than 10% of respondents ranked schedule as the most important project planning criterion regardless of what culture they identified with in their organization. Table 16 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 16

Organizational Culture – Schedule Strategy (Emphasis on Schedule)

Descriptive Summary

	Most Important	Important	Least Important
	n = 19	n = 82	n = 123
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	11/8.6	46/35.9	71/55.5
Creative	2/7.7	10/38.5	14/53.8
Controlling	3/8.8	16/47.1	15/44.1
Competitive	3/8.3	10/27.8	23/63.9

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three schedule rankings. The test showed χ^2 (6, N = 224) = 3.11. Thus, there was no relationship between organizational culture and schedule ranking (strategy). Furthermore, there was no correlation based on the resultant Cramer's V (6, N = 224) = .08

budget analysis.

Budget is an important part of the planning phase. Table 17 is a high-level summary of the findings based on the project planning phase category, budget.

Table 17

Project Planning Phase – Budget Strategy (Emphasis on Budget)

ANOVA Summary

	Most Important	Important	Least Important
	n = 36	n = 112	n = 76
	M/SD	*M/SD*	*M/SD*
Emotional Intelligence	5.32/.45	5.44/.49	5.37/.54
Well-being	6.08/.64	6.23/.64	6.21/.61
Self-control	5.35/.68	5.52/.73	5.39/.80
Emotionality	5.35/.70	5.49/.76	5.41/.72
Sociability	5.28/.93	5.34/.79	5.25/.93
Authentic Leadership	12.74/1.52	12.72/1.62	12.80/1.56
Transparency	15.86/2.74	15.60/2.47	15.70/2.33
Moral-ethical	13.67/1.77	13.42/2.24	13.68/1.93
Balanced processing	9.44/1.46	9.81/1.54	10.05/1.39
Self-awareness	11.97/1.89	12.04/1.93	11.82/2.06
Decision Making	NA	NA	NA
Leader Authority	29.31/4.51	28.69/4.70	28.29/4.81
Leader Authority (%)	35.25/29.03	32.10/25.45	30.51/26.72
Subordinate Input	35.97/5.65	36.76/5.45	37.93/5.61
Subordinate Input (%)	48.56/33.88	57.53/35.07	63.24/33.45

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

No significant findings were discovered for the budget criterion in terms of emotional intelligence, authentic leadership and decision making.

Those respondents who ranked budget as the most important project strategy criterion scored lower on average in each of the emotional intelligence categories (with

the exception of sociability) compared to those who ranked budget as least important or just important (see Figure 24). The highest emotional intelligence scores were associated with those respondents who placed moderate importance on the budget strategy criterion.

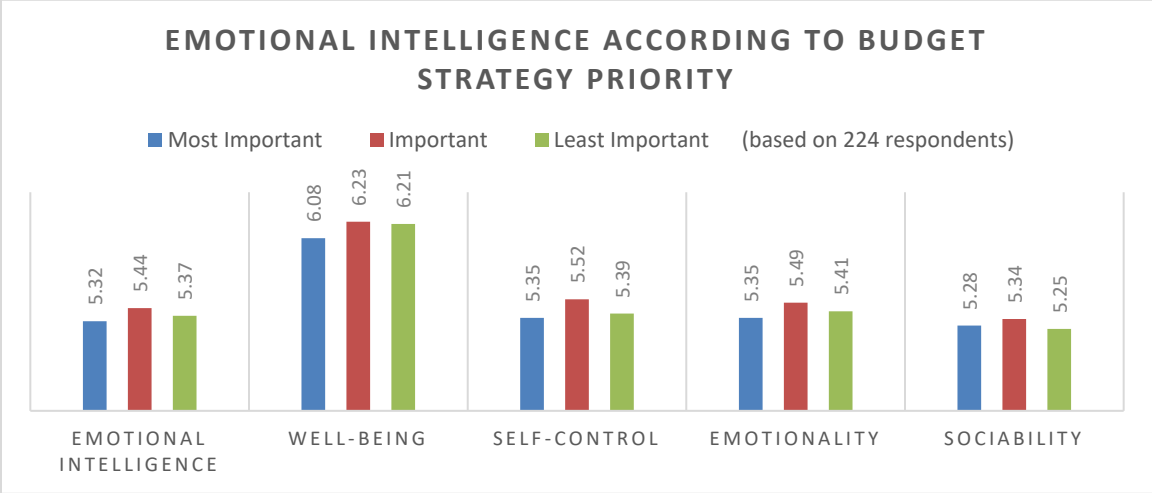


Figure 24. Emotional Intelligence vs. Budget Strategy Ranking

Those respondents who ranked budget as the most important project strategy criterion scored slightly lower on average in balanced processing compared to those who ranked budget as least important or just important (see Figure 25). All other categories were very similar regardless of budget strategy criterion ranking.

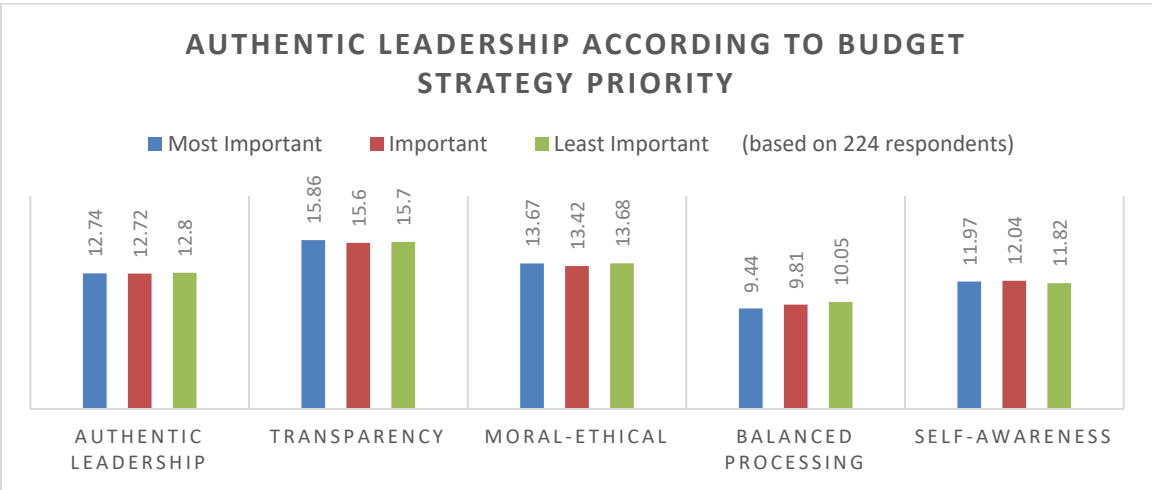


Figure 25. Authentic Leadership vs. Budget Strategy Ranking

Those respondents who ranked budget as the most important project strategy criterion scored higher on average in *leader authority* and lower on average in *subordinate input* compared to those who ranked budget as least important or just important (see Figure 26).

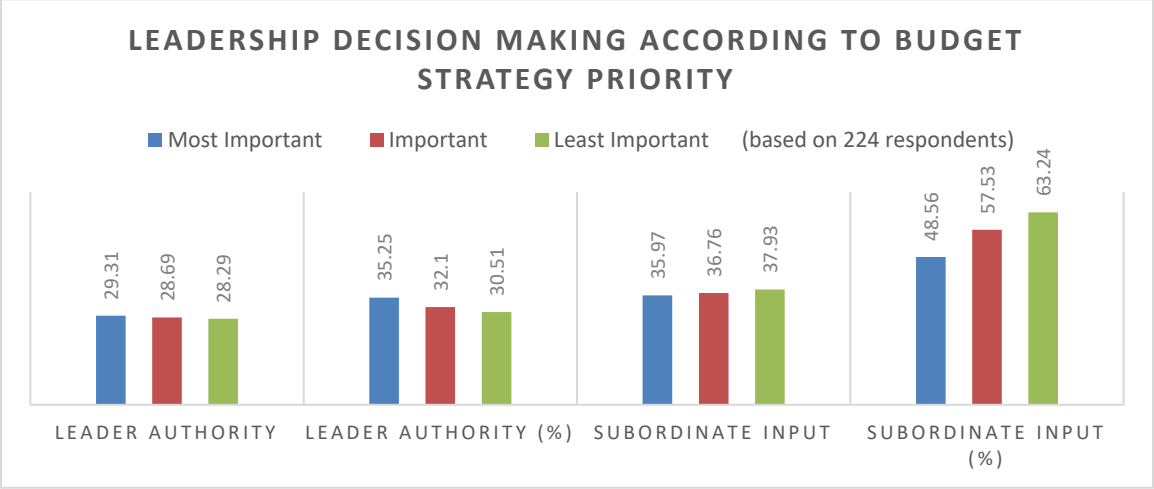


Figure 26. Leadership Decision Making vs. Budget Strategy Ranking

The factor, organizational culture, was examined for the budget category. Those who identified with the competitive culture placed the most emphasis (over 30%) on budget. Those who identified with the controlling culture placed the least emphasis (over 50%) on budget. Table 18 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 18

Organizational Culture – Budget Strategy (Emphasis on Budget)

Descriptive Summary

	Most Important	Important	Least Important
	n = 36	n = 112	n = 76
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	17/13.3	69/53.9	42/32.8
Creative	4/15.4	12/46.2	10/38.4
Controlling	3/8.8	13/38.3	18/52.9
Competitive	12/33.3	18/50.0	6/16.7

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three budget rankings. The test showed χ^2 (6, N = 224) = 16.81, $p < .05$. While there was a relationship between organizational culture and budget ranking (strategy), the correlation was weak based on the resultant Cramer's V (6, N = 224) = .19. In short, project managers in a competitive culture placed the most emphasis on budget; the competitive culture is characterized as being flexible. In contrast, project managers in a controlling culture placed the least emphasis on budget; the controlling culture is characterized as being inflexible.

Project Implementation Phase.

The project implementation phase categories were analyzed next using Analysis of variance (ANOVA). The analysis started with safety, proceeded to quality, and finished with customer satisfaction.

safety analysis.

Safety is an important part of the implementation phase. Table 19 is a high-level summary of the findings based on the project implementation phase category, safety.

Table 19

Project Implementation Phase – Safety Strategy (Emphasis on Safety)

ANOVA Summary

	Most Important n = 176 *M/SD*	Important n = 24 *M/SD*	Least Important n = 24 *M/SD*
Emotional Intelligence	5.41/.49	5.37/.59	5.36/.49
Well-being	6.62/.61	6.19/.71	6.03/.70
Self-control	5.50/.69	5.26/.88	5.26/.95
Emotionality	5.43/.75	5.48/.76	5.49/.64
Sociability	5.30/.87	5.36/.90	5.26/.78
Authentic Leadership	12.77/1.57	12.54/1.91	12.81/1.32
Transparency	15.72/2.42	15.29/3.16	15.71/2.03
Moral-ethical	13.56/2.08	13.58/1.98	13.46/2.08
Balanced processing	9.82/1.49	9.83/1.63	9.96/1.40
Self-awareness	11.99/1.95	11.46/2.11	12.13/1.94
Decision Making	NA	NA	NA
Leader Authority	28.70/4.73	28.75/4.73	28.21/4.60
Leader Authority (%)	32.28/26.43	34.04/29.29	28.54/23.87
Subordinate Input	36.98/5.73	37.67/4.04	36.75/5.67
Subordinate Input (%)	57.19/35.02	66.13/28.19	56.00/36.87

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

No significant findings were discovered for the safety criterion in terms of emotional intelligence, authentic leadership and decision making.

Those respondents who ranked safety as the most important project strategy criterion scored higher on average in well-being, self-control and overall EI compared to those who ranked safety as least important or just important (see Figure 27). Those respondents who ranked safety as the most important project strategy criterion scored lowest on average in emotionality.

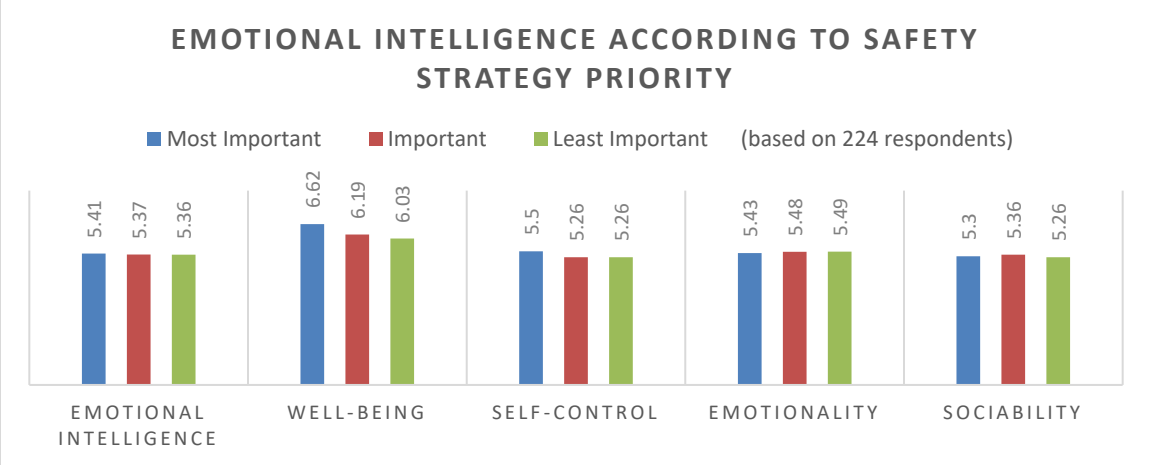


Figure 27. Emotional Intelligence vs. Safety Strategy Ranking

Those respondents who ranked safety as the most important project strategy criterion scored similar to those who ranked safety as important and least important in all authentic leadership categories (see Figure 28).

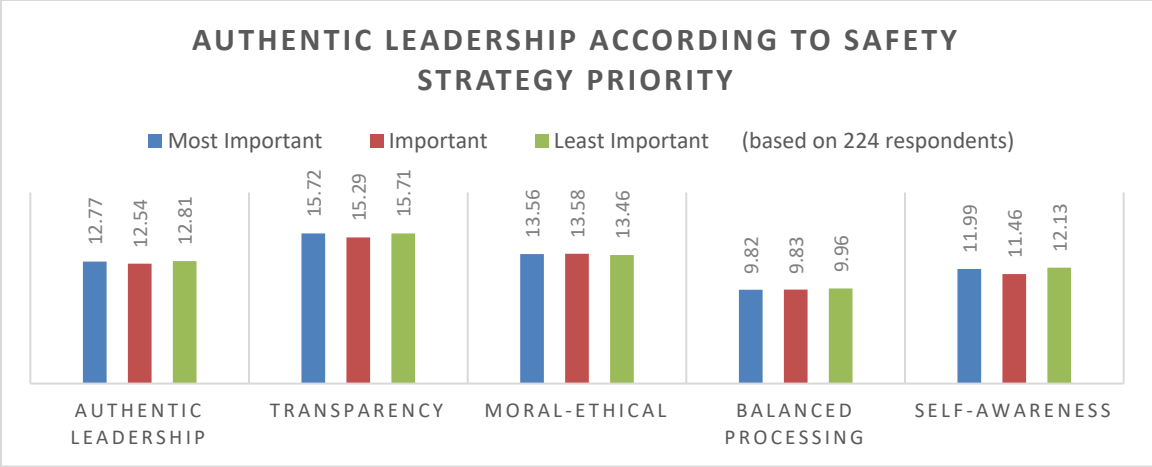


Figure 28. Authentic Leadership vs. Safety Strategy Ranking

Those respondents who ranked safety as an important project strategy criterion scored higher on average in leader authority and higher on average in subordinate input compared to those who ranked safety as least important or most important (see Figure 29).

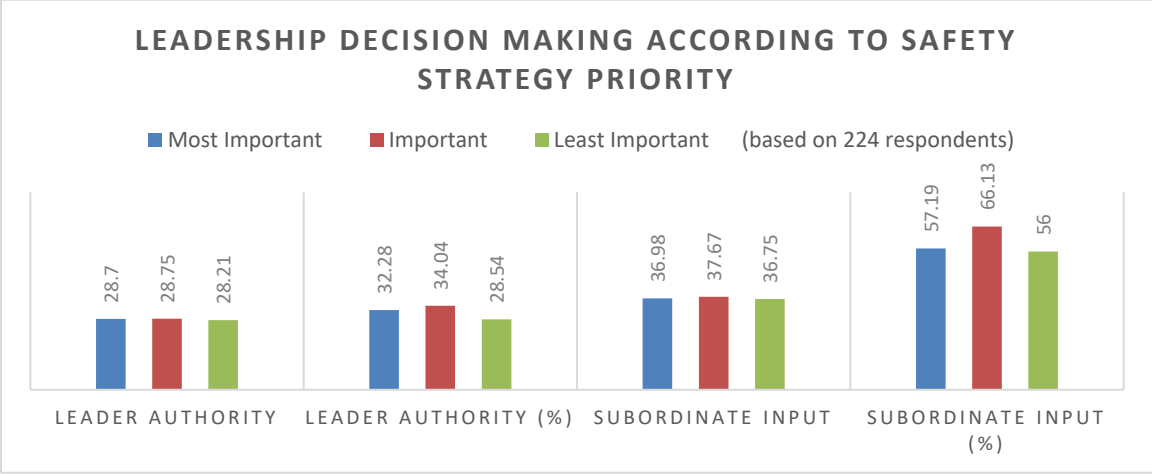


Figure 29. Leadership Decision Making vs. Safety Strategy Ranking

The factor, organizational culture, was examined for the safety category. More than 75% of the respondents ranked safety as the most important project implementation criterion regardless of what culture they identified with in their organization. In contrast, just over 10% of respondents ranked safety as the least important project implementation

criterion. Table 20 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 20

Organizational Culture – Safety Strategy (Emphasis on Safety)

Descriptive Summary

	Most Important	Important	Least Important
	n = 176	n = 24	n = 24
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	107/83.6	7/5.5	14/10.9
Creative	15/57.7	9/34.6	2/7.7
Controlling	22/64.8	6/17.6	6/17.6
Competitive	32/88.8	2/5.6	2/5.6

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three safety rankings. The test showed χ^2 (6, N = 224) = 25.39, $p < .05$. While there was a relationship between organizational culture and safety ranking (strategy), the correlation was weak based on the resultant Cramer's V (6, N = 224) = .24. In short, those project managers in a collaborative and competitive culture placed the most emphasis on safety; the collaborative and competitive cultures are categorized as flexible cultures. In contrast, those project managers in a controlling culture placed the least emphasis on safety; the controlling culture is categorized as being inflexible.

quality analysis.

Quality is an important part of the implementation phase. Table 21 is a high-level summary of the findings based on the project implementation phase category, quality.

Table 21

Project Implementation Phase – Quality Strategy (Emphasis on Quality)

ANOVA Summary

	Most Important	Important	Least Important
	n = 23	n = 124	n = 77
	M/SD	*M/SD*	*M/SD*
Emotional Intelligence	5.17/.42 *	5.40/.50	5.46/.51 *
Well-being	5.92/.70 *	6.19/.64	6.31/.56 *
Self-control	4.93/.80 *	5.52/.73 *	5.48/.72 *
Emotionality	5.32/.58	5.45/.74	5.48/.78
Sociability	5.04/.71	5.29/.88	5.41/.86
Authentic Leadership	12/1.21 **	12.80/1.54	12.88/1.69 **
Transparency	14.39/2.48 **	15.73/2.27 **	15.97/2.66 **
Moral-ethical	12.83/1.77	13.52/2.17	13.82/1.92
Balanced processing	9.74/1.29	9.88/1.50	9.79/1.54
Self-awareness	11.04/1.49 **	12.12/1.86 **	11.95/2.19
Decision Making	NA	NA	NA
Leader Authority	28.04/5.04	28.73/4.68	28.70/4.67
Leader Authority (%)	29.65/26.99	31.96/26.27	32.97/26.76
Subordinate Input	36.52/5.11	36.81/5.55	37.53/5.72
Subordinate Input (%)	54.74/34.46	56.89/35.12	60.83/33.86

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

* A difference in *well-being* was discovered between those who placed high emphasis on quality and those who placed low emphasis on quality. F = 3.511, df = 2, p = .032. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in well-being, M = 5.92, SD = .70. Those project managers who ranked quality lowest, scored highest in well-being, M = 6.31, SD = .56. There was also a difference in 'self-control' between those who placed high emphasis on quality and those who placed low emphasis on quality. F = 6.532, df = 2, p = .002. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in self-control, M = 4.93, SD = .80. Those project managers who ranked quality lowest, scored moderately self-control, M = 5.48, SD = .72. Subsequently, a difference in 'emotional intelligence quotient' was discovered between those who placed high emphasis on quality and those who placed low emphasis on quality. F = 2.943, df = 2, p = .055. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in emotional intelligence quotient, M = 5.17, SD = .42. Those project managers who ranked quality lowest, scored highest in emotional intelligence quotient, M = 5.46, SD = .51.

** A difference in *transparency* was discovered between those who placed high emphasis on quality and those who placed low emphasis on quality. F = 3.822, df = 2, p = .023. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in transparency, M = 14.39, SD = 2.48. Those project managers who ranked quality lowest, scored highest in transparency, M = 15.97, SD = 2.66. There was also a difference in self-awareness between those who

placed high emphasis on quality and those who placed low emphasis on quality. F = 2.970, df = 2, p = .053. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in self-awareness, M = 11.04, SD = 1.49. Those project managers who ranked quality lowest, scored moderately in self-awareness, M = 11.95, SD = 2.19. Subsequently, a difference in *authentic leadership quotient* was discovered between those who placed high emphasis on quality and those who placed low emphasis on quality. F = 2.978, df = 2, p = .053. A post hoc tukey test was conducted to ascertain the difference. Those project managers who ranked quality highest, scored lowest in authentic leadership quotient, M = 12.00, SD = 1.21. Those project managers who ranked quality lowest, scored highest in authentic leadership quotient, M = 12.88, SD = 1.69.

Those respondents who ranked quality as the most important project strategy criterion scored lower on average in all emotional intelligence categories and overall EI compared to those who ranked quality as least important or just important (see Figure 30).

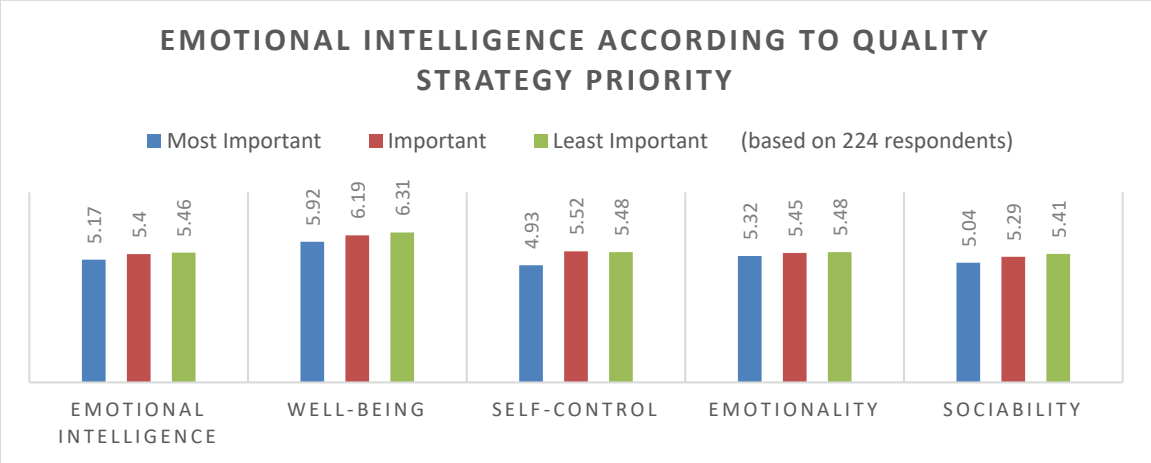


Figure 30. Emotional Intelligence vs. Quality Strategy Ranking

Those respondents who ranked quality as the most important project strategy criterion scored lower on average on all authentic leadership categories and overall AL compared to those who ranked quality as least important or just important (see Figure 31).

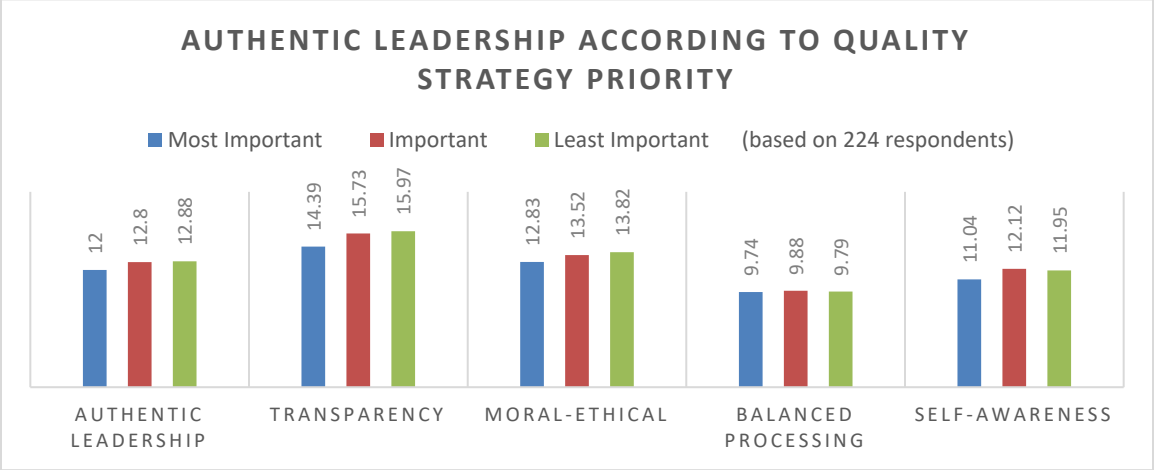


Figure 31. Authentic Leadership vs. Quality Strategy Ranking

Those respondents who ranked quality as the most important project strategy criterion scored lower on average in leader authority and lower on average in subordinate input compared to those who ranked quality as least important or just important (see Figure 32).

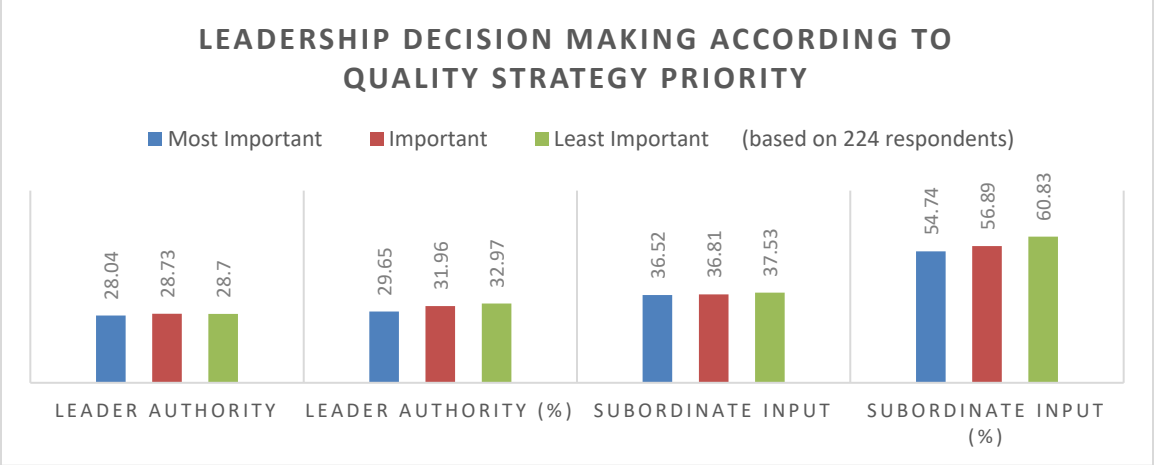


Figure 32. Leadership Decision Making vs. Quality Strategy Ranking

The factor, organizational culture, was examined for the quality category. More than half of the respondents ranked quality as an important project implementation criterion. In contrast, just over 10% of respondents ranked quality as the most important project implementation criterion. Table 22 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 22

Organizational Culture – Quality Strategy (Emphasis on Quality)

Descriptive Summary

	Most Important	Important	Least Important
	n = 23	n = 124	n = 77
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	11/8.6	77/60.2	40/31.2
Creative	6/23.1	9/34.6	11/42.3
Controlling	4/11.8	19/55.9	11/32.3
Competitive	2/5.6	19/52.8	15/41.6

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three quality rankings. The test showed χ^2 (6, N = 224) = 9.39. Thus, there was no relationship between organizational culture and quality ranking (strategy). Furthermore, there was no correlation based on the resultant Cramer's V (6, N = 224) = .21

customer satisfaction analysis.

Customer satisfaction is an important part of the implementation phase. Table 23 is a high-level summary of the findings pertaining to customer satisfaction.

Table 23

Project Implementation Phase – Customer Satisfaction Strategy (Emphasis on Customer Satisfaction)

ANOVA Summary

	Most Important n = 25 *M/SD*	Important n = 76 *M/SD*	Least Important n = 123 *M/SD*
Emotional Intelligence	5.54/.58	5.40/.47	5.37/.50
Well-being	6.29/.67	6.23/.59	6.17/.65
Self-control	5.56/.91	5.39/.73	5.46/.73
Emotionality	5.65/.76	5.43/.74	5.41/.73
Sociability	5.56/.88	5.31/.83	5.25/.88
Authentic Leadership	13.30/1.73	12.72/1.55	12.65/1.56
Transparency	16.52/2.38	15.71/2.54	15.48/2.41
Moral-ethical	14.16/2.03	13.59/1.93	13.40/2.14
Balanced processing	10.04/1.70	9.76/1.44	9.84/1.48
Self-awareness	12.48/2.24	11.83/2.07	11.92/1.83
Decision Making	NA	NA	NA
Leader Authority	28.88/4.27	28.49/4.78	28.71/4.77
Leader Authority (%)	32.80/26.66	31.63/26.03	32.20/26.80
Subordinate Input	37.84/4.71	37.18/6.00	36.77/5.45
Subordinate Input (%)	66.88/30.88	57.32/35.44	56.66/34.67

Note. Asterisks identify significance for the respective categories based on the output of the ANOVA.

No significant findings were discovered for the customer satisfaction criterion in terms of emotional intelligence, authentic leadership and decision making.

Those respondents who ranked customer satisfaction as the most important project strategy criterion scored lower on average in all emotional intelligence categories and overall EI compared to those who ranked customer satisfaction as least important or just important (see Figure 33).

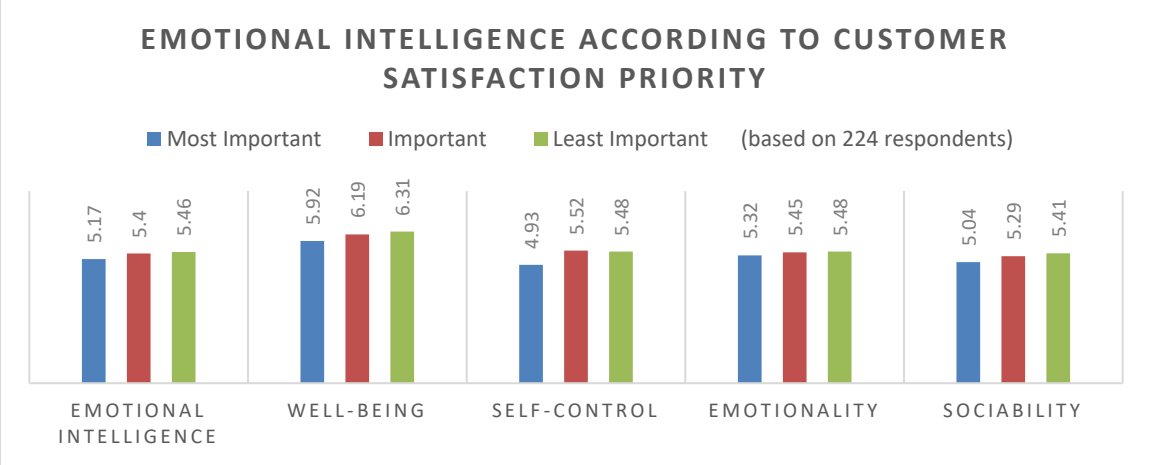


Figure 33. Emotional Intelligence vs. Customer Satisfaction Strategy Ranking

Those respondents who ranked customer satisfaction as the most important project strategy criterion scored lower on average on all authentic leadership categories and overall AL compared to those who ranked customer satisfaction as least important or just important (see Figure 34).

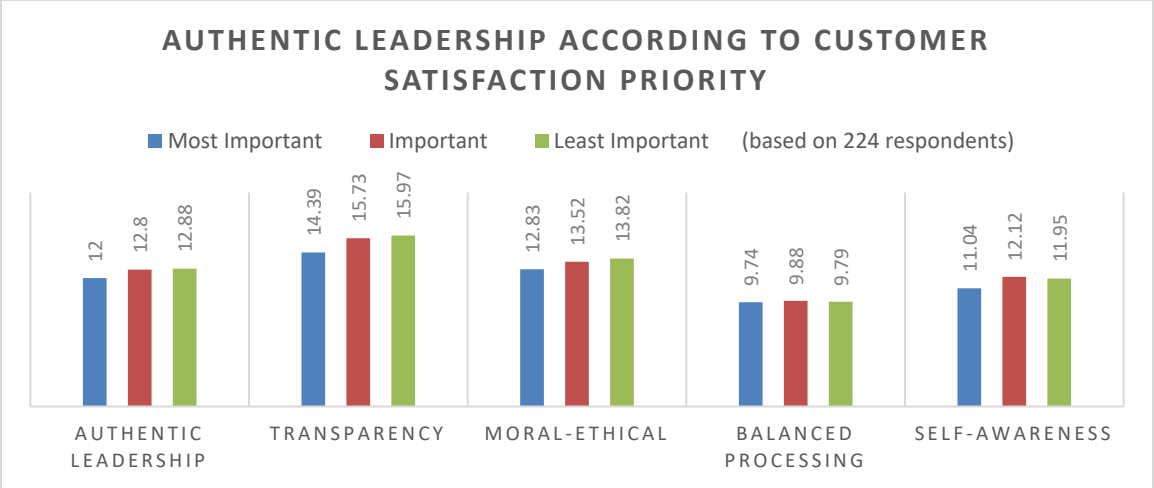


Figure 34. Authentic Leadership vs. Quality Strategy Ranking

Those respondents who ranked customer satisfaction as the most important project strategy criterion scored lower on average in leader authority and lower on average in subordinate input compared to those who ranked customer satisfaction as least important or just important (see Figure 32).

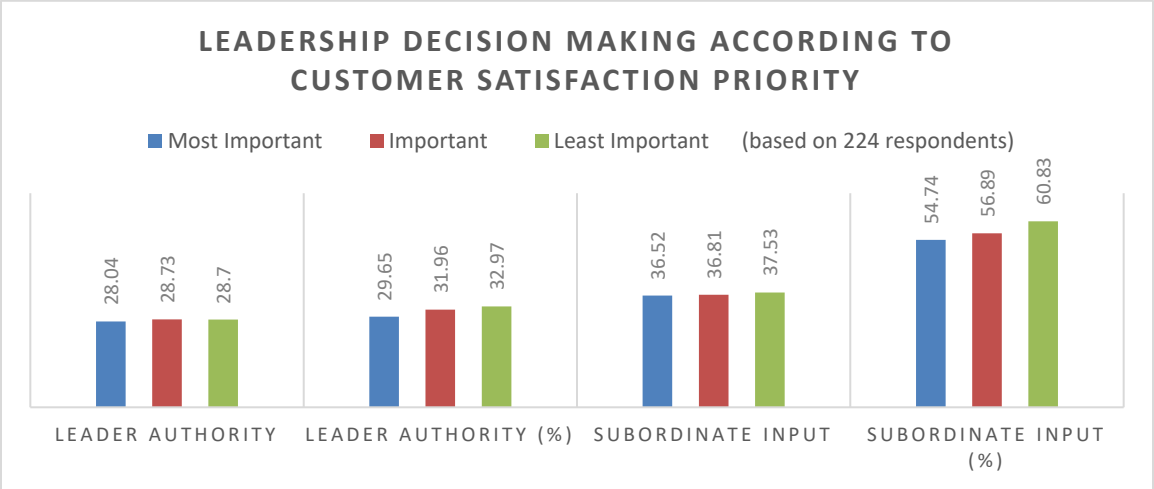


Figure 35. Leadership Decision Making vs. Customer Satisfaction Strategy Ranking

The factor, organizational culture, was examined for the customer satisfaction category. More than half of the respondents ranked customer satisfaction as the least important project implementation criterion regardless of what culture they identified with

in their organization. In contrast, just over 10% of respondents ranked customer satisfaction as the most important project implementation criterion; over 20% of those identifying with the controlling culture ranked customer satisfaction as the most important project implementation criterion. Table 24 provides a detailed analysis of ranking based on the survey response(s) and culture types.

Table 24

Project Implementation Phase – Customer Satisfaction Strategy (Emphasis on Customer Satisfaction)

Descriptive Summary

	Most Important	Important	Least Important
	n = 25	n = 76	n = 123
	n/%	*n/%*	*n/%*
Organizational Culture			
Collaborative	10/7.8	44/34.4	74/57.8
Creative	5/19.2	8/30.8	13/50.0
Controlling	8/23.5	9/26.5	17/50.0
Competitive	2/5.6	15/41.7	19/52.7

Note. More than 50% of respondents identified themselves as being in a collaborative culture.

A Chi-square test was also conducted for the four organizational culture types versus the three customer satisfaction rankings. The test showed χ^2 (6, N = 224) = 10.24. Thus, there was no relationship between organizational culture and customer satisfaction ranking (strategy). Furthermore, there was no correlation based on the resultant Cramer's V (6, N = 224) = .15

Qualitative Descriptive Discoveries

The researcher interviewed 22 individuals involved in project management and construction for the convergent parallel QUAL-Quan strategy (see Figure 13). Most of these individuals managed projects in the Southcentral Alaska region. Table 25 is a high-level summary of interviewee experience.

Table 25

General Interviewee Information

Gender		
Combined	Female	Male
n = 22	n = 3	n = 19
(100%)	(13.6%)	(86.4%)

Project Management Experience (years)							
Combined	Less than 2	2 to 5	6 to 10	11 to 15	16 to 20	21 to 25	More than 25
n = 22	n = 0	n =3	n = 4	n = 6	n = 4	n = 2	n = 3
(100%)	(0%)	(13.6%)	(18.2%)	(27.3%)	(18.2%)	(9.1%)	(13.6%)

Project Management Experience in Alaska (years)							
Combined	Less than 2	2 to 5	6 to 10	11 to 15	16 to 20	21 to 25	More than 25
n = 22	n = 1	n =3	n = 6	n = 4	n = 4	n = 1	n = 3
(100%)	(4.5%)	(13.6%)	(27.4%)	(18.2%)	(18.2%)	(4.5%)	(13.6%)

Note. Out of 22 interviewees, 14 had all their years of project management experience within the state of Alaska.

The average years of project management experience for the 22 interviewees was 16 years. Years of experience ranged from 3 years to 39 years with a standard deviation of 9.55. Similarly, the average years of project management experience in the state of

Alaska for the 22 interviewees was 14.4 years. Years of experience ranged from 1 year to 38.5 years with a standard deviation of 9.78.

Interviewees were asked what percentage of their projects was affected by geography in question 3; see Table 26 for a list of questions used as a guideline for the interview. The following definition of geography was shared with each of the interviewees at the time of this question: "Geography [is] the study of the physical features of the earth and its atmosphere, and of human activity as it affects and is affected by these, including the distribution of populations and resources, land use, and industries" (Oxford Dictionary, 2018, para. 1). Based on interviewee's responses, nearly 95% of projects were affected by geography on average. Interviewee responses ranged from 50 to 100%; sixteen interviewees (73%) believed that 100% of their projects were affected by geography.

Table 26

Geography Interview Questions

Questions 1 thru 6
1 – How many years of experience do you have working in project management or construction?
2 – How many of those years have been spent working in Alaska?
3 – What percentage of your projects, managed in the state of Alaska, is affected by geography and why?
4 – What percentage of those projects affected by geography is related to physical geographical factors, and what percentage is related to human geographical factors?
5 – What are some of the project objectives and project performance factors affected by the geographical factors identified?
6 – What can be done to minimize the effect of these factors and what have you done to minimize the effect of these factors on your projects?

Note. The interview protocol used for this research can be referenced in the appendix.

Question 4 was intended to understand what percentage of geography's affect was attributed to physical geography versus human geography. On average, 75% of geographical affects were related to physical geography; over 50% of geographical affects were related to human geography. Based on these responses, it's possible for projects to be affected by both physical geography and human geography at the same time. In any case, physical geography appears to have a greater effect on project management than human geography. "Alaska has 17 of the nation's 20 largest mountain ranges and experiences extremes in precipitation, snowfall, and temperature swings that are unique to the arctic and northern latitudes" (Connor & Harper, 2013, p. 23). Alaska's vast and rugged landscape dominates the geographical setting of the 49th state.

Interviewees were asked to review a list of physical geographical factors as potential factors on project management in the state of Alaska. Then they were asked to rank each factor on a scale of 1 to 10 where a 1 means 'little to no impact' and a 10 means 'significant or major impact' to project management. Figure 36 depicts the average response to these 13 factors for all 22 interviewees.

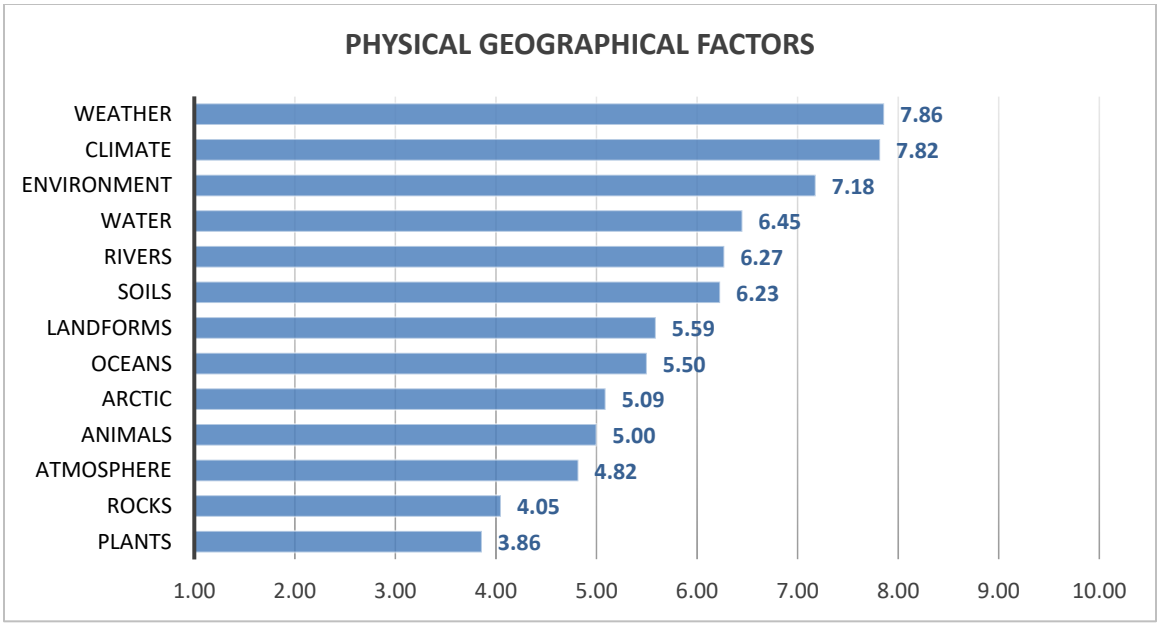


Figure 36. Physical Geographical Factors Affecting Project Management in Alaska

Based on the responses, the most significant physical geographical factors were weather, climate, and environment. The least significant were atmosphere, rocks, and plants. Details pertaining to all thirteen physical geographical factors can be found in Table 27.

Weather and climate are certainly geographical factors that can inhibit project progress. Environment is another important geographical factor. Appendix H provides thorough examples of the 13 physical geographical factors in the state of Alaska.

Table 27

Physical Geographical Factors and Impact on Projects in the state of Alaska

Descriptive Summary

	Mean	Std. Deviation	Rank
Factors			
Weather	7.86	2.19	1
Climate	7.82	1.99	2
Environment	7.18	2.52	3
Water	6.45	2.36	4
Rivers	6.27	2.71	5
Soils	6.23	2.31	6
Landforms	5.59	2.74	7
Oceans	5.50	2.94	8
Arctic	5.09	2.74	9
Animals	5.00	2.14	10
Atmosphere	4.82	2.50	11
Rocks	4.05	2.52	12
Plants	3.86	2.34	13

Note. Weather, climate and environment had the greatest impact on projects based on interviewee response.

Similarly, interviewees were asked to review a list of human geographical factors as potential factors on project management in the state of Alaska. Then, they were asked to rank each factor on a scale of 1 to 10 where a 1 means *little to no impact* and a 10 means *significant or major impact* to project management. Figure 37 depicts the average response to these 13 factors for all 22 interviewees.

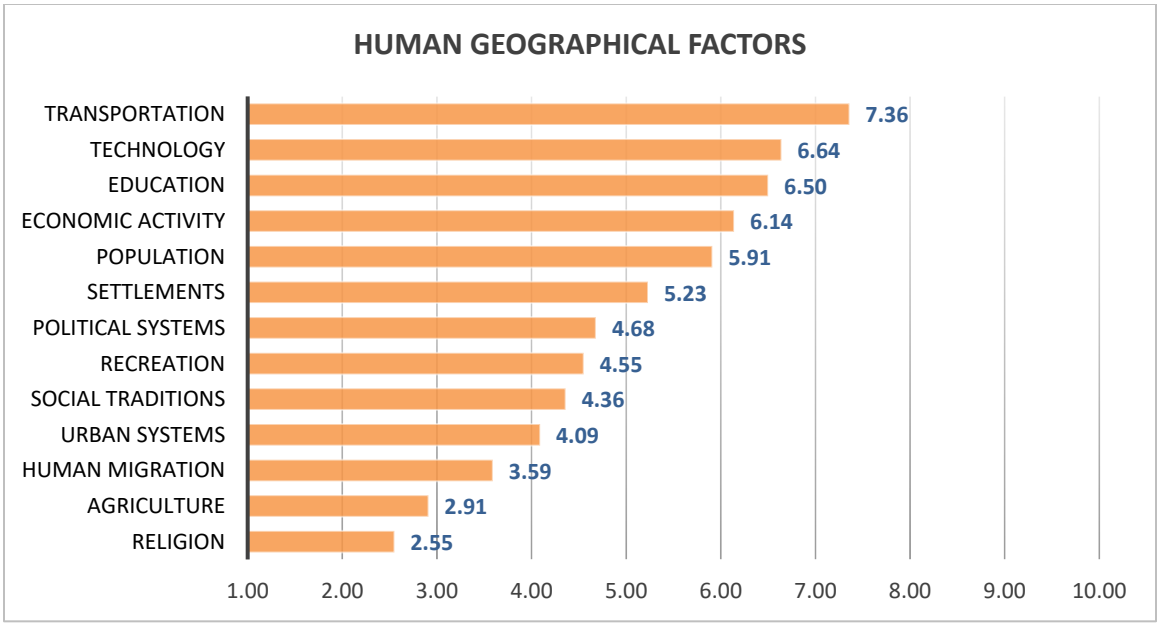


Figure 37. Human Geographical Factors Affecting Project Management in Alaska

Based on the responses, the most significant human geographical factors were transportation, technology, and education. The least significant were human migration, agriculture, and religion. Details pertaining to all thirteen human geographical factors can be found in Table 28. Appendix I provides thorough examples of the 13 human geographical factors in the state of Alaska.

Table 28

Human Geographical Factors and Impact on Projects in the state of Alaska

Descriptive Summary

	Mean	Std. Deviation	Rank
Factors			
Transportation	7.36	2.44	1
Technology	6.64	2.17	2
Education	6.50	2.43	3
Economic Activity	6.14	2.25	4
Population	5.91	2.00	5
Settlements	5.23	2.58	6
Political Systems	4.68	2.66	7
Recreation	4.55	2.30	8
Social Traditions	4.36	2.74	9
Urban Systems	4.09	2.18	10
Human Migration	3.59	2.17	11
Agriculture	2.91	1.74	12
Religion	2.55	1.79	13

Note. Transportation, technology and education had the greatest impact on projects based on interviewee response.

Question 5 was intended to assess the impact of geography on project success criterion in the state of Alaska; the prioritization associated with the various criteria shape the project strategy. Figure 38 depicts the frequency of reference to each of the project success factors.

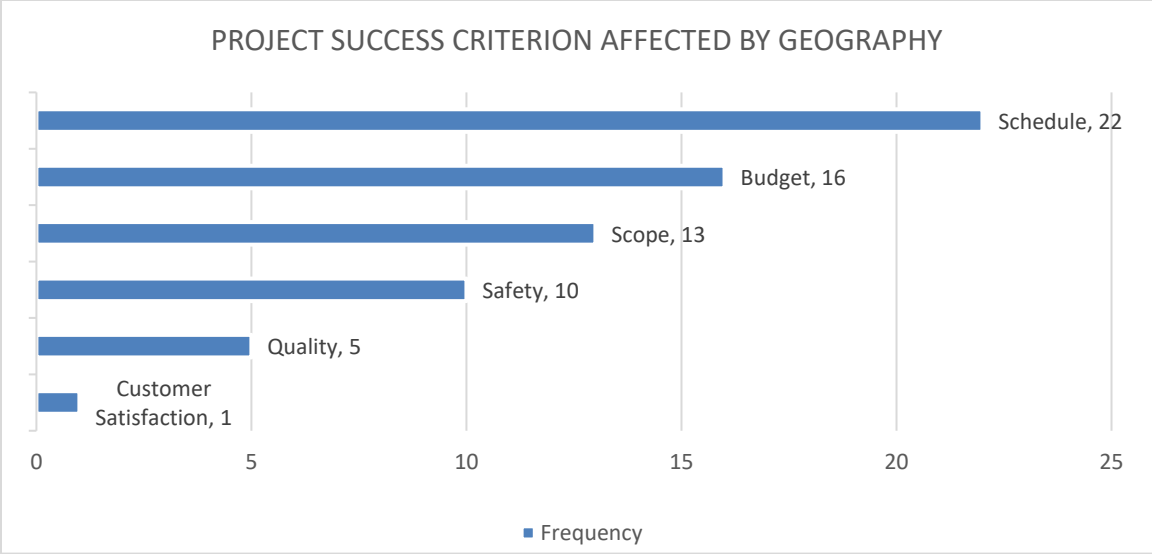


Figure 38. Project Success Factors Affected by Geography in Alaska

Each of the 22 interviewees identified schedule as a primary project success factor impacted by geography. 13 interviewees noted scope as a secondary project success factor impacted by geography; 6 interviewees noted budget as a secondary project success factor and 3 interviewees noted safety as a secondary project success factor. 10 interviewees noted budget as a tertiary project success factor impacted by geography; 7 interviewees noted safety as a tertiary project success factor and 5 interviewees noted quality as a tertiary project success factor. Customer satisfaction was briefly alluded to during the series of interviews at least once.

Based on these responses, schedule, budget, and scope were the most vulnerable project success factors in terms of geographical impacts; these three criteria are also considered strategical elements of the project planning phase.

Question 6 was intended to reveal solutions or defenses to the effects of geography on project management in the state of Alaska. The responses to this question varied but a hierarchy of considerations was generated based on the frequency of

discussion during each of the interviews. For instance, planning and/or pre-planning was mentioned over forty times throughout the interviews. "Pre-planning is especially important when you are dealing with a remote project" (Ewers, 2013, p. 41). Experience was mentioned over fifteen times, and communication was mentioned at least ten times. The suggestions were collected and can be referenced in Figure 39. Based on the chart, seven levels of suggested mitigations are possible. The first four levels include: 1) Planning, 2) Experience, 3) Communication, and 4) Timing.

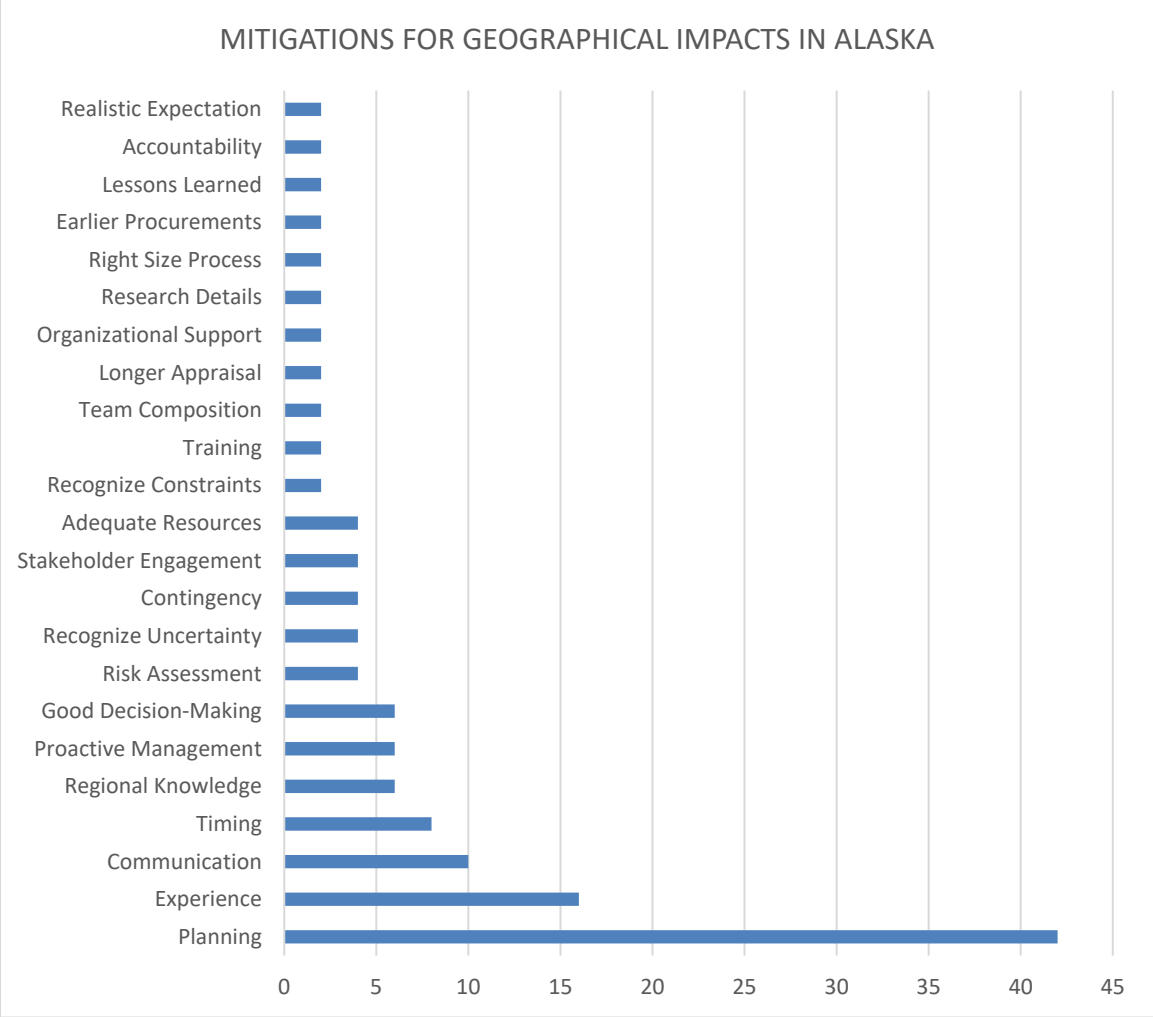


Figure 39. Suggestions for Mitigating Geographical Impacts to Project Management

Clearly, the interviewees felt that planning was the most important consideration or activity for defending against geographical impacts on project management in the state of Alaska. For example, planning for cold weather ahead of time can help mitigate the potential for winter temperatures. "Mitigation actions could lower the cost and schedule impact of cold weather" (Diedericks, 2009, p. 75). Planning for the unforeseen can pay huge dividends in many cases.

Additional analyses were conducted using bivariate comparison of means (Correlation) to understand the relationship between project management experience in Alaska and each of the physical and human geographical factors and their impacts on project management.

Qualitative Inferential Discoveries

The correlational analysis was accomplished by comparing interviewee responses regarding geographical impacts to their initial declaration for years of experience. The physical geographical factors showed seven significant relationships; the human geographical factors showed two significant relationships.

The seven physical geographical factors were in the + .4 range meaning the strength of association was medium in the positive direction. Climate, water, rivers, arctic, and atmosphere each had a correlation value above .4 with significance. Environment and soils had a correlation value slightly below .4 with significance. See table 29 for details pertaining to each of the thirteen physical geographical factors.

Table 29

Alaska Experience – Relationship to Physical Geographical Factors and their Impact on Projects in the state of Alaska

Correlation

	Pearson *r*	Significance	Note
Factors			
Weather	.377	.058	-
Climate	.405	.040	*
Environment	.399	.044	*
Water	.477	.014	*
Rivers	.460	.018	*
Soils	.395	.046	*
Landforms	.237	.245	-
Oceans	.426	.030	-
Arctic	.420	.033	*
Animals	.280	.166	-
Atmosphere	.452	.024	*
Rocks	.335	.095	-
Plants	.114	.578	-

Note. * Correlation is significant at the .05 level (2-tailed).

The two human geographical factors were in the + .4 range meaning the strength of association was medium in the positive direction. Transportation had a correlation value above .4 with significance. Technology had a correlation value slightly below .4 with significance. See table 30 for details pertaining to each of the thirteen physical geographical factors.

Table 30

Alaska Experience – Relationship to Human Geographical Factors and their Impact on Projects in the state of Alaska

Correlation

	Pearson *r*	Significance	Note
Factors			
Transportation	.404	.041	*
Technology	.389	.049	*
Education	.316	.116	-
Economic Activity	.297	.140	-
Population	.116	.573	-
Settlements	.206	.313	-
Political Systems	.203	.321	-
Recreation	.385	.052	-
Social Traditions	.215	.291	-
Urban Systems	.147	.475	-
Human Migration	.217	.287	-
Agriculture	-.015	.941	-
Religion	.322	.108	-

Note. * Correlation is significant at the .05 level (2-tailed).

In terms of significance, nine different geographical factors showed a medium and positive correlation with years of experience in Alaska. The strongest correlation was water followed by rivers, arctic, atmosphere, climate, transportation, environment, soils, and technology. In short, the experience of project managers working in the state of Alaska is related to their selection of geographical factors. This doesn't mean the other

18 factors are less important for planning purposes. For instance, weather had a smaller correlation factor. Weather is an obvious factor to plan for regardless of years of experience.

In summary, geography is an important part of the project environment that must be taken into consideration for each of the planning and implementation strategies. An interesting characteristic of geography is its variability and dynamic nature. For instance, an early snowstorm in Alaska can ambush a project without much notice. Similarly, a severe wind event can wreak havoc on an offshore project that is vulnerable to the elements. The project manager must account for these inconveniences during the planning stage or suffer the consequences. "Project managers also must be ready to course-correct when the assumptions that informed their requirements are proven wrong" (Applebaum, 2016, p. 64). A certain degree of flexibility or agility can go a long way in terms of responding to geographical changes in a proactive manner.

Summary of the Findings

The findings obtained in this research effort have generated a smorgasbord of data that can be used by organizations and project management offices (PMOs) in Alaska to bridge the gap between project environments and project strategies. The alignment of project strategies to project environments is one way to ensure project success (Robinson, 2016). The uncertainty and complexity of the environment in Alaska has been made less uncertain as a result of this research. In fact, organizations can benefit from this research and improve project management performance in deficient areas through project strategy attunement.

Based on the analysis, some of the data can be used to reinforce internal factors that contribute to a project manager's offensive strategy. Other data are used to strengthen a project manager's defense against external factors such as geography. The project manager is at the center of the project universe, and it's his/her job to understand the environment and make adjustments to strategy throughout a project's lifecycle. "At the core of project management is the need to balance the time, money, and scope of the project" (DiVincenzo, 2006, p. 20). The project manager is the person responsible for selecting and optimizing strategies that realize project objectives.

Continuous improvements to the project management process should take into account both objective and subjective discoveries. "The need for efficient project management is always continuous. The introduction of quantitative analysis cannot itself solve management problems; it is necessary also to form a synthesis of quantitative facts and the human element to achieve professional project management" (Ahuja, Dozzi & Abourizk, 1994, p. 7). The human element revolves around the project manager and his/her engagement with both internal and external stakeholders. Furthermore, the project environment is shaped by tangible or physical elements, and intangible or human elements.

Given the nature of these elements, the environment is always changing. "A project's direction and its elements may change even on a continuous basis in a project, which suggest the project and its strategy is dynamic" (Artto et al., 2008b, p. 8). The Project Management Strategy Attunement (PMSA) model depicted in Figure 1 incorporated both tangible and intangible elements. This research is proof that these

elements matter and influence the shape of the project environment. These elements also comprise the four research questions explored over the past year.

Project Strategies

The four research questions that have been purported throughout this research shared a common link to project management in the state of Alaska. This link had to do with project management strategies and project environments. Project strategies have a lot to do with project success. "Project strategy is a direction in a project that contributes to success of the project in its environment" (Artto et al., 2008b, p. 8). Without a strategy, the project management process progresses haphazardly, and success is a gamble. Project strategy identifies the project's objectives and defines ways of achieving those goals. The project strategy is something determined and/or selected by the project manager in charge of managing the project.

For this research, project strategies were associated with project performance factors because project performance factors are high-level project objectives. The project performance factors identified during the literature review were divided into two phases: 1) The Planning Phase, and 2) The Implementation (Execution) Phase. The three project planning strategies explored in this research included scope, schedule, and budget. The emphasis placed on these three factors resulted in a particular order, with each order or sequence comprising a strategy. A total of 6 strategies were possible:

1. SCOPE, SCHEDULE, BUDGET *(Scope is highest priority, budget is lowest)*
2. SCOPE, BUDGET, SCHEDULE *(Scope is highest priority, schedule is lowest)*
3. SCHEDULE, SCOPE, BUDGET *(Schedule is highest priority, budget is lowest)*
4. SCHEDULE, BUDGET, SCOPE *(Schedule is highest priority, scope is lowest)*
5. BUDGET, SCOPE, SCHEDULE *(Budget is highest priority, schedule is lowest)*

6. BUDGET, SCHEDULE, SCOPE *(Budget is highest priority, scope is lowest)*

Table 31 provides a summary of these categories. Based on the table, nearly 45% of respondents fit into the 1-Scope, 2-Budget, 3-Schedule strategy category, while 31% fit into the 1-Scope, 2-Schedule, 3-Budget strategy category.

Table 31

Project Planning Strategy - Formation

Summary of Findings

Strategy (Sequence)	n	%
1-Scope, 2-Schedule, 3-Budget	69	30.8
1-Scope, 2-Budget, 3-Schedule	100	44.6
1-Schedule, 2-Scope, 3-Budget	7	3.1
1-Schedule, 2-Budget, 3-Scope	12	5.4
1-Budget, 2-Scope, 3-Schedule	23	10.3
1-Budget, 2-Schedule, 3-Scope	13	5.8

Note. Numbers (n) are out of 224 survey respondents.

Over 75% of respondents fit into the first two categories. This is to be expected since scope definition is so important to project performance. "As a result of inadequate problem definitions, projects miss important opportunities, waste limited resources, and take longer than necessary" (Choo, 2014, p. 1462). A failure to accurately define scope can lead to failure on many accounts.

The three project implementation strategies included safety, quality, and customer satisfaction. The emphasis placed on these three factors also resulted in six different strategies:

1. SAFETY, QUALITY, CUSTOMER SATISFACTION *(Safety is highest priority, customer Satisfaction is lowest)*
2. SAFETY, CUSTOMER SATISFACTION, QUALITY *(Safety is highest priority, quality is lowest)*
3. QUALITY, SAFETY, CUSTOMER SATISFACTION *(Quality is highest priority, customer satisfaction is lowest)*
4. QUALITY, CUSTOMER SATISFACTION, SAFETY (*Quality is highest priority, safety is lowest)*
5. CUSTOMER SATISFACTION, SAFETY, QUALITY *(Customer satisfaction is highest priority, quality is lowest)*
6. CUSTOMER SATISFACTION, QUALITY, SAFETY *(Customer satisfaction is highest priority, safety is lowest)*

Table 32 provides a summary of these categories. Based on the table, 50% of respondents fit into the 1-Safety, 2-Quality, 3-Customer Satisfaction strategy category, while nearly 29% fit into the 1-Safety, 2-Customer Satisfaction, 3-Quality strategy category.

Table 32

Project Implementation Strategy - Formation

Summary of Findings

Strategy (Sequence)	n	%
1-Safety, 2-Quality, 3-Cusomter Satisfaction	112	50.0
1-Safety, 2-Customer Satisfaction, 3-Quality	64	28.6
1-Quality, 2-Safety, 3-Customer Satisfaction	11	4.8
1-Quality, 2-Customer Satisfaction, 3-Safety	12	5.4
1-Customer Satisfaction, 2-Safety, 3-Quality	13	5.8
1-Customer Satisfaction, 2-Quality, 3-Safety	12	5.4

Note. Numbers (n) are out of 224 survey respondents.

Once again, over 75% of respondents fit into the first two categories. Safety is obviously an important project strategy for project managers in the last frontier. Based on the combined data, 128 respondents (57%) placed high emphasis on both scope and safety.

Project Environments

The four research questions addressed project elements that comprise the project environment. "Environment refers to the world outside the project's boundaries with which [the] project as an open system must continuously interact … the boundary between a project and its environment is dynamic and in constant change as [the] project organization integrates external resources into its organization" (Artto, Kujala, Dietrich & Martinsuo, 2007, p. 9). These research questions defined an array of project environments that are as unique as the project managers who operate in these challenging environments. A majority of project managers surveyed in the state of Alaska believed leadership, emotional intelligence, organizational culture, and geography all have a

severe to major impact on project management in the state of Alaska. The first research question had to do with leadership and its effect on project strategy.

Leadership.

The project management profession places a title on those who practice the craft, project manager. This title is used by countless organizations and entities to label those who are assigned to manage a project or initiative on behalf of the organization (Anantatmula, 2010). According to Hebert, 2002, project management is 50% strategy and understanding of the project environment, 40% management and 10% technical application. Indeed, the project manager is tasked with management duties, but these duties must be met with an equal measure of leadership. Leadership includes developing strategies and implementing strategies that align with the project environment.

Project managers are leaders as they guide a project team in the pursuit of project objectives. They communicate vision, motivate team members, and engage stakeholders as they progress a project through its lifecycle. Thus, leadership is an important factor that determines how well a project performs with regards to organizational expectations. The Project Leadership Advantage Leverage (PLAL) model depicted in Figure 6 is supported by this research as is the following research question.

RQ1. To what extent did leadership impact project strategy and performance in Alaska?

- To begin with, 91% of project managers surveyed in the state of Alaska believed leadership had a severe to major impact on project management in the state of Alaska. This opinion aligns well with previous research on the topic. According to Zimmerer and Yasin, 1998, positive leadership is related to 76% of successful projects, and negative leadership is related to 67% of failed projects.

- On average, project managers surveyed in the state of Alaska surpassed the midpoint on all authentic leadership categories including moral-ethical (68%), balanced-processing (66%), transparency (63%), and self-awareness (60%). The average authentic leadership quotient for those surveyed was 12.8 (64%); a brief description of these categories can be found in Appendix E. A project manager with a moral compass sets a positive course for team members and stakeholders as they support a values-based leader (Moylan & Walker, 2012). A project manager who looks at an issue from both sides is more likely to make a good decision (Edmonson, 2016). A project manager who is transparent tends to experience healthy networks of relationships (Goffee & Jones, 2009). A project manager who is self-aware tends to be goal oriented (Bennis, 2009b).
- On average, project managers surveyed in the state of Alaska scored lower on decision-making authority (29%) and higher on subordinate input (37%). For comparison, these project managers ranked below the 50th percentile on decision-making authority and above the 50th percentile on subordinate input. This means decisions are heavily influenced by the group as the project manager operates with a consensus management style; a description of the consensus manager can be found in Appendix D. This also means subordinate group information input to the decision-making process is important and welcome. Subordinate participation in decision making can improve morale, innovation and individual performance (Edmonson, 2016; Krog & Govender, 2015).

scope project planning strategy summary.

- Those project managers who ranked scope as the most important project planning strategy also scored highest in balanced-processing; those who ranked scope as the least important also scored lowest in balanced-processing (reference Table 13). A project manager who scores high in balanced-processing enjoys open dialogue concerning complex issues (Metcalf, 2014).
  - Project managers who ranked scope as the most important project planning strategy scored highest on average in each of the authentic leadership categories (See Figure 41); those who ranked scope as the least important project planning strategy scored lowest on average in each of the authentic leadership categories.
- Those project managers who ranked scope as the most important project planning strategy also scored highest in subordinate input; those who ranked scope as the least important also scored lowest in subordinate input (reference Table 13).
  - Project managers who ranked scope as the most important project planning strategy scored lowest on average in decision-making authority and highest on average in subordinate input (see Figure 41).

schedule project planning strategy summary.

- Those project managers who ranked schedule as the most important project planning strategy also scored lowest in authentic-leadership quotient; those who ranked schedule as the least important project planning strategy also scored highest in authentic-leadership quotient and moderately in the moral-ethical area (reference Table 15).

- Those project managers who ranked schedule as the most important project planning strategy also scored lowest in the moral-ethical area; those who ranked schedule as the least important project planning strategy also scored moderately in moral-ethical, and those who ranked schedule moderately, scored highest in moral-ethical (reference Table 15).
  - Project managers who ranked schedule as the most important project planning strategy scored lowest on average in each of the authentic leadership categories (see Figure 42).
  - Project managers who ranked schedule as the most important project planning strategy scored highest on average in decision-making authority and lowest on average in subordinate input (see Figure 42).

budget project planning strategy summary.

  - Project managers who ranked budget as the most important project planning strategy scored lowest on average in balanced processing, and highest on average in transparency; all other categories were similar regardless of budget ranking (see Figure 43).
  - Project managers who ranked budget as the most important project planning strategy scored highest on average in decision-making authority and lowest on average in subordinate input (see Figure 43).

safety project implementation strategy summary.

  - Project managers who ranked safety as the most important project implementation strategy scored highest on average in transparency, and lowest

on average in balanced processing; all other authentic leadership categories were similar regardless of safety ranking (see Figure 44).

- Project managers who ranked safety as the most important project implementation strategy scored moderately in both decision-making authority and subordinate input (see Figure 44).

quality project implementation strategy summary.

- Those project managers who ranked quality as the most important project implementation strategy also scored lowest in transparency, self-awareness and overall authentic leadership quotient; those who ranked quality as the least important project implementation strategy also scored highest in transparency, highest in overall authentic leadership quotient, and moderately in self-awareness (reference Table 21).
  - Project managers who ranked quality as the most important project implementation strategy scored lowest on average in all authentic leadership categories (see Figure 45).
  - Project managers who ranked quality as the most important project implementation strategy scored lowest on average in both decision-making authority and subordinate input (see Figure 45).

customer satisfaction project implementation strategy summary.

- Project managers who ranked customer-satisfaction as the most important project implementation strategy scored lowest on average in all authentic leadership categories (See Figure 46).

- Project managers who ranked customer-satisfaction as the most important project implementation strategy scored lowest on average in both decision-making authority and subordinate input (See Figure 46).

Emotional Intelligence.

Project managers are known for their hard skill competencies. These competencies include administration, delegation, and problem solving (Geogrhegan & Dulewicz, 2008; Whetten & Cameron, 2015). Today's project managers must go a step further and incorporate soft skill competencies into their leadership skill set. Emotional intelligence is an important soft skill that includes both personal competence and social competence.

Personal competence is comprised of self-awareness (well-being) and self-regulation (self-control). Self-awareness and self-regulation can impact the project environment (Batool, 2013). Social competence includes social-awareness (sociability) and relationship management (emotionality). Social-awareness and relationship management can impact the interactions between project managers and stakeholders (Chopra & Kanji, 2010). Both the personal and social aspects of emotional intelligence were considered in this research effort. The outcome of this research effort addressed the following research question.

RQ2. To what extent did emotional intelligence impact project strategy and performance in Alaska?

- To begin with, 69% of project managers surveyed in the state of Alaska believed emotional intelligence had a severe to major impact on project management in the state of Alaska. This opinion aligns well with past research on the topic. Successful

project managers consistently build bridges and establish healthy relationships with project stakeholders (Pryke et al., 2015). Project success is dependent on both leadership competency and emotional intelligence (Muller & Turner, 2010).

- On average, project managers surveyed in the state of Alaska surpassed the midpoint on all emotional intelligence categories including well-being (89%), self-control (77%), emotionality (77%), and sociability (76%). The average emotional intelligence quotient for those surveyed was 5.4 (77%); a brief description of these categories can be found in Appendix A. According to researchers, project management competency increases with emotional intelligence (Clarke, 2009).

scope project planning strategy summary.

- Project managers who ranked scope as the most important project planning strategy scored highest on average in each of the emotional intelligence categories (see Figure 41).

schedule project planning strategy summary.

- Project managers who ranked schedule as the most important project planning strategy scored highest on average in self-control, lowest on average in well-being and sociability, and moderate in emotionality and overall emotional intelligence quotient (see Figure 42).

budget project planning strategy summary.

- Project managers who ranked budget as the most important project planning strategy scored lowest on average in each of the emotional intelligence categories with the exception of sociability (moderate); the highest emotional intelligence

scores were associated with those who placed moderate importance on budget (see Figure 43).

safety project implementation strategy summary.

- Project managers who ranked safety as the most important project implementation strategy scored highest on average in well-being, self-control, and overall emotional intelligence quotient; these project managers scored lowest on average in emotionality and moderate on average in sociability (see Figure 44).

quality project implementation strategy summary.

- Those project managers who ranked quality as the most important project implementation strategy also scored lowest in well-being, self-control and overall emotional intelligence quotient; those who ranked quality as the least important project implementation strategy also scored highest in emotional intelligence quotient, highest in well-being, and moderately in self-control (reference Table 21).
  - Project managers who ranked quality as the most important project implementation strategy scored lowest on average in all emotional intelligence categories including overall emotional intelligence quotient (see Figure 45).

customer satisfaction project implementation strategy summary.

- Project managers who ranked customer-satisfaction as the most important project implementation strategy scored lowest on average in all emotional intelligence categories including overall emotional intelligence quotient (see Figure 46).

Organizational Culture.

The role of project manager can be found in every organizational type. Project managers serve an important function as they pursue organizational goals and solutions in the form of projects. Researchers agree that organizational culture has a major impact on project management and project performance (Morrison et al., 2008). With that said, project managers flourish in some cultures and stagnate in others.

The project environment is clearly influenced by the organizational culture, and the project management strategies encouraged by the organization may not align with the project manager's perspective. Recognizing these subtle differences may pave the way to improving corporate guidelines and shaping organizational culture. The information obtained by this research can be used to understand the impacts of organizational culture and address the following research question.

RQ3. To what extent did organizational culture impact project strategy and performance in Alaska?

- To begin with, 84% of project managers surveyed in the state of Alaska believed organizational culture had a severe to major impact on project management in the state of Alaska.
- Nearly 58% of project managers surveyed in the state of Alaska identified with a collaborative culture in their current organization; 16% of project managers identified with a competitive culture, 15% identified with a controlling culture, and 11% identified with a creative culture. A description of each of the organizational cultures can be found in Appendix F.

scope project planning strategy summary.

- The controlling culture had the highest percentage (over 82%) of support for scope as the most important project planning strategy. Next was the collaborative culture with 78%, the creative culture with 76%, and the competitive culture with 58% supporting scope as the most important project planning strategy. Most project managers recognize the importance of good scope definition as it translates the project's technical objective into detailed work elements (Burek, 2011).

schedule project planning strategy summary.

- Less than 10% of respondents, regardless of organization culture, ranked schedule as the most important project planning strategy. In fact, more than 50% of respondents in the collaborative, creative, and competitive cultures ranked schedule as the least important project planning strategy; the controlling culture placed moderate importance on schedule (47%).

budget project planning strategy summary.

- Over 30% of those who identified with the competitive culture ranked budget as the most important project planning strategy; less than 15% of the collaborative, creative, and controlling cultures ranked budget as the most important project planning strategy. More than 50% of those who identified with the controlling culture ranked budget as the least important project planning strategy, while more than 50% of those in a collaborative and competitive culture placed moderate importance on budget.

safety project implementation strategy summary.

- The competitive culture had the highest percentage of support (over 88%) for safety as the most important project implementation strategy. Next was the collaborative

culture with 84%, the controlling culture with 65%, and the creative culture with 58% supporting safety as the most important project implementation strategy. Safety is of paramount importance to project success (Choudhry et al., 2007); a disregard for safety can lead to schedule delays and budget overruns.

quality project implementation strategy summary.

- Over 23% of those who identified with the creative culture ranked quality as the most important project implementation strategy; less than 12% of the collaborative, controlling, and competitive cultures ranked quality as the most important project implementation strategy. More than 30% of all respondents regardless of culture type ranked quality as the least important project implementation strategy, while more than 50% of those in a collaborative, controlling, and competitive culture placed moderate importance on quality.

customer satisfaction project implementation strategy summary.

- Those who identified with the controlling culture placed the most emphasis on customer-satisfaction with 24% ranking it as the most important project implementation strategy. More than 50% of all respondents regardless of culture type ranked customer-satisfaction as the least important project implementation strategy.

Geography.

Project managers are actively engaged in managing projects all over the world. The hazards, methods, and speed with which projects are managed depend on the location of the project. The project environment is heavily influenced by geography. In some instances, physical geography thwarts the efforts of well-intentioned project managers. In other instances, human geography nips at the heels of the project manager

who strives to focus on meeting project objectives. The resultant distractions can cause the project to miss its mark in terms of organizational goals and objectives. The output of the qualitative research adequately addressed the following research question.

RQ4. To what extent did geography impact project strategy and performance in Alaska?

- To begin with, 60% of project managers surveyed in the state of Alaska believed geography had a severe to major impact on project management in the state of Alaska.
- Project managers and practitioners who were interviewed strongly supported the notion that geography was a major factor to be considered during both the planning and implementation of projects in the state of Alaska.
- Interviewees ranked weather, climate, environment, water, rivers, and soils in the top six out of thirteen physical geographical factors in the order presented. Ie. based on interviewee response(s), weather is the most important physical factor to be considered by project managers during the project planning and project implementation phases.
- A correlational analysis comparing interviewee responses regarding physical geographical impacts to their years of experience revealed seven significant relationships in the + .4 range meaning the strength of association was medium in the positive direction. The seven relationships existed between years of experience and climate, water, rivers, arctic, atmosphere, environment, and soils.
- Interviewees ranked transportation, technology, education, economic activity, population, and settlements in the top six out of thirteen human geographical factors in the order presented. Ie. based on interviewee response(s), transportation is the

most important human factor to be considered by project managers during the project planning and project implementation phases.

- A correlational analysis comparing interviewee responses regarding human geographical impacts to their years of experience revealed two significant relationships in the + .4 range meaning the strength of association was medium in the positive direction. The two relationships existed between years of experience, and transportation and technology.

project planning strategies summary.

  - Based on interviewee responses, the project planning strategies and success criteria most impacted by geography in the state of Alaska included schedule, budget, and scope in that order.

project implementation strategies summary.

  - The project implementation strategies and success criteria most impacted by geography in the state of Alaska included safety, quality, and customer satisfaction in that order.

- Those who were interviewed unanimously emphasized the importance of planning for geography when managing projects in Alaska. Other mitigations to geographical hazards included experience, communication, timing, and regional knowledge. Figure 40 depicts an extensive list of mitigations in order of importance based on interviews.

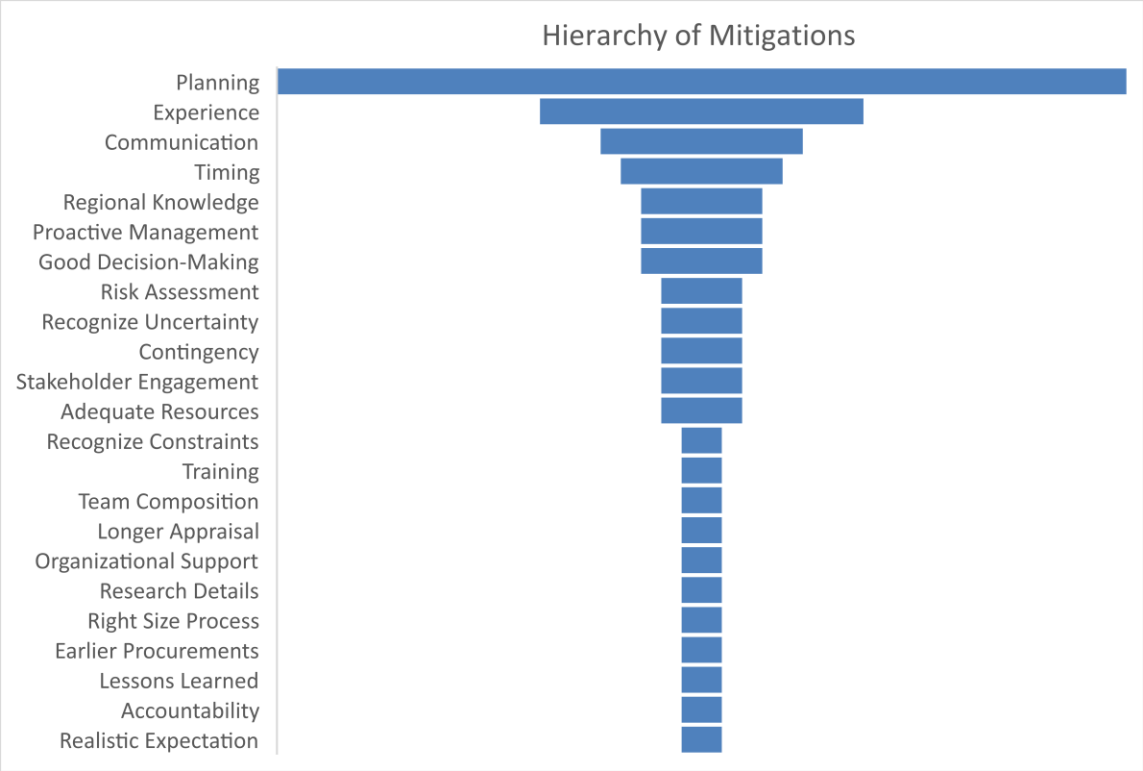


Figure 40. Hierarchy of Mitigations for Geographical Impacts in the state of Alaska.

As noted earlier, each of the interviewees mentioned planning as the top mitigation to geographical factors in the state of Alaska. Planning is a noun that easily rolls off the tip of the tongue. Planning is the establishment of goals, policies, and procedures as it relates to project strategy (Merriam-Webster, 2018). When interviewees were asked to explain, they noted many elements including schedule, material and equipment lead-times, logistics, craftsmen and specialty trades, job-site conditions and restrictions, weather and climate conditions, work-schedule and time-of-year. According to Ahuja et al., "planning is selecting objectives and then establishing programs and procedures for achieving the objectives It is decision making for the future; it is looking ahead" (1994, p. 10). In short, planning for geography involves thinking about geographical factors and organizing them so that project objectives can be achieved. "Developing the logistics expertise required to successfully undertake remote-site

projects throughout Alaska, or anywhere, takes planning" (Ewers, 2013, p. 44). It's been said, "failing to plan is planning to fail". Indeed, failing to plan for geography can be a huge mistake.

Each of the suggestions obtained from the interviewees is a gold nugget in the eyes of this researcher. For instance, a couple of interviewees emphasized the need to have realistic expectations when executing projects in Alaska. This advice aligns well with Fister-Gale. "To successfully complete projects in extreme environments without being overwhelmed, project professionals have to maintain realistic expectations about what they can accomplish" (Fister-Gale, 2011, p. 27). Project managers can bring optimism or pessimism to a project planning party. But the best present they can bring to the table in these crucial times is realism. It's also been said, "hope is not a strategy". While hope is not a bad thing, it must be tempered with realistic expectations when working in the Last Frontier.

Project Planning Strategy Profiles

Two-thirds (66%) of project managers surveyed believed they were most successful with managing scope during the planning phase. Interestingly, when it comes to project planning strategies and success factors, over 75% of project managers surveyed in the state of Alaska believed scope was the most important. In contrast, 55% of project managers believed schedule was the least important project planning factor.

The average responses of participants in this research were compiled to generate a profile for each of the three project planning strategies. Scope, schedule, and budget comprised the project planning strategies based on the initial literature review and project manager emphasis. The profiles generated were based solely on the participants in this

study. So, when a particular trait is rated 'lower' in the profile description, it means lower compared to the other participants. Bear in mind that all of the participants in the survey scored high in emotional intelligence and authentic leadership, and all of the participants placed high value on subordinate input and participation in decision-making.

The first profile to be reviewed is the project manager who placed the greatest emphasis on scope as a project planning strategy. Figure 41 is a representative profile of a project manager who placed the highest priority on scope during the project planning phase.

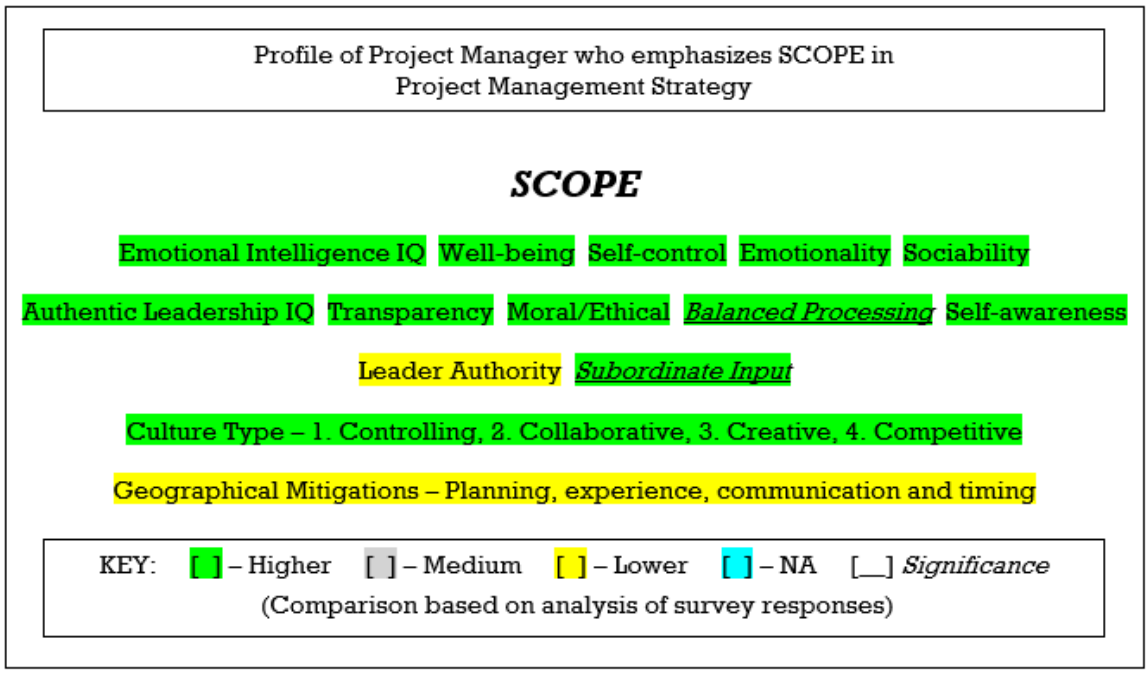


Figure 41. Project Manager Profile for Scope Project Planning Strategy

High overall emotional intelligence, high overall authentic leadership and high subordinate input are all unique characteristics associated with this profile.

An organization lacking in scope definition may consider providing training to enhance emotional intelligence quotient and authentic leadership quotient. These same organizations may consider special coverage in the area of balanced processing. An

unbiased approach to scope definition is important based on the output of the quantitative research. These organizations may encourage project managers to reach out to stakeholders, team members and subordinates for input as they define scope and create work breakdown structures.

Organizations may consider training project managers to recognize geographical factors that impact scope. Based on the research, scope is influenced by geography and planning is an important part of mitigating for geography.

The second profile to be reviewed is the project manager who placed the greatest emphasis on schedule as a project planning strategy. Figure 42 is a representative profile of a project manager who placed the highest priority on schedule during the project planning phase.

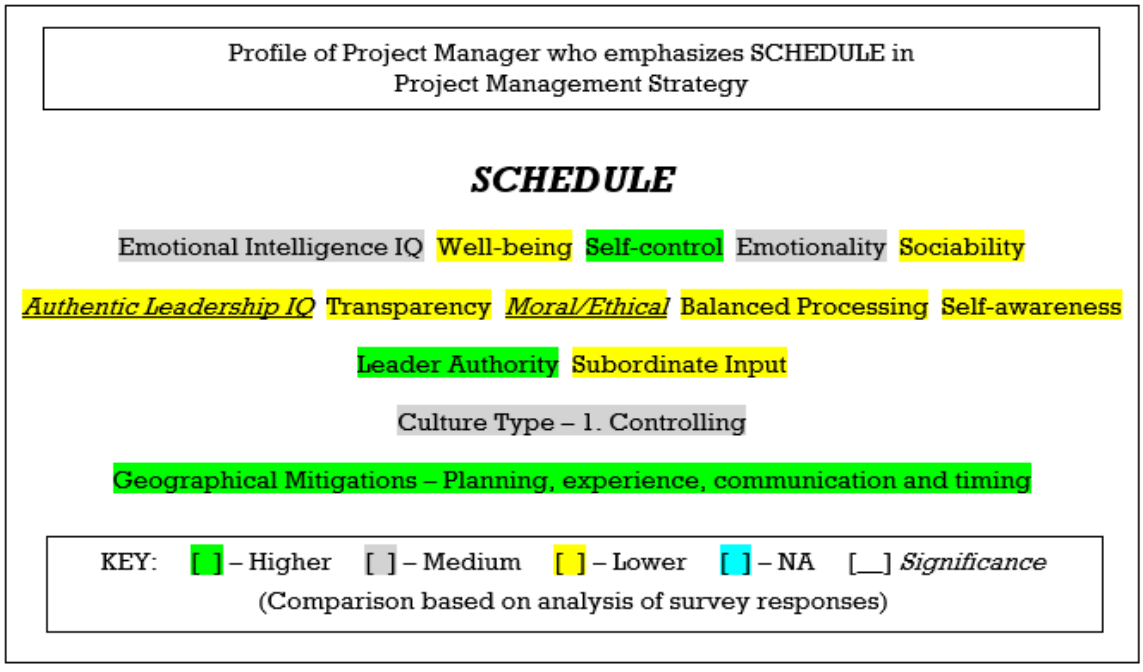


Figure 42. Project Manager Profile for Schedule Project Planning Strategy

High leader authority and high self-control are unique characteristics associated with this profile. The schedule strategy is especially vulnerable to geographical hazards.

An organization that struggles to complete projects on time may consider technical training that builds confidence in the project manager's ability to make important decisions that directly influence schedule. For instance, multiple software packages exist for building and managing project schedules. Training in one of these programs may improve the project manager's ability to meet schedules and deadlines. Based on the research, emotional intelligence and authentic leadership have little effect on a project manager's emphasis on schedule. However, self-control and emotionality are potential considerations.

Organizations may consider training project managers to recognize geographical factors that impact schedule. "Adverse weather can have a detrimental effect on construction costs and on the overall duration of a construction project" (Diedericks, 2009, p. 75). Based on the research, schedule is heavily influenced by geography and planning is an important part of mitigating for geography. The uncertainty and complexity of Alaska's environment make it difficult for project managers to stay on schedule. Geographical elements can become a distraction to the project manager and project team if not planned for in the beginning.

The third profile to be reviewed is the project manager who placed the greatest emphasis on budget as a project planning strategy. Figure 43 is a representative profile of a project manager who placed the highest priority on budget during the project planning phase.

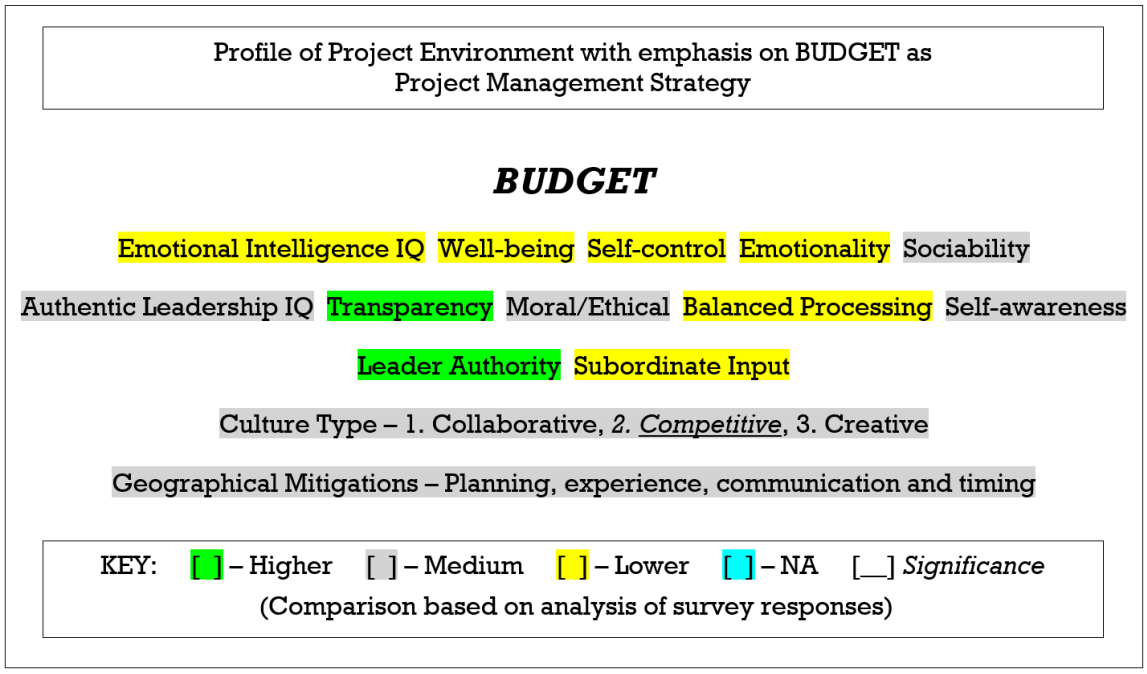


Figure 43. Project Manager Profile for Budget Project Planning Strategy

High leader authority and high transparency are unique characteristics associated with this profile.

An organization that struggles to complete projects within the allocated budget may consider supplemental training that builds confidence in the project manager's ability to make important decisions that directly influence cost-control. Financial coaching and project-controls support is another avenue that can be pursued to enhance the project manager's performance in this area. Based on the research, emotional intelligence has little effect on a project manager's emphasis on budget. However, sociability is a potential consideration. Based on the research, authentic leadership has a moderate effect on a project manager's emphasis on budget. Transparency, moral-ethical, and self-awareness are potential considerations.

Organizations may consider training project managers to recognize geographical factors that impact a project's budget. Based on the research, budget is moderately

influenced by geography and planning is an important part of mitigating for geography. Recognizing and understanding the nature of geographical pitfalls associated with Alaska's environment may help the project manager plan for the unknown. Geographical elements can become a financial drain to the project if not planned for in the beginning.

Project Implementation Strategy Profiles

Nearly half (46%) of project managers surveyed believed they were most successful with managing customer satisfaction during the implementation phase. But when it came to project implementation strategies and success factors, over 78% of project managers surveyed in the state of Alaska believed safety was the most important project implementation factor; 55% of project managers believed customer satisfaction was the least important project implementation factor.

The average responses of participants in this research were compiled to generate a profile for each of the three project implementation strategies. Safety, quality, and customer satisfaction comprised the project implementation strategies based on the initial literature review and project manager emphasis. As previously noted, the profiles generated were based solely on the participants in this study. So, when a particular trait is rated 'lower' in the profile description, it means lower compared to the other participants. Bear in mind that all of the participants scored high in emotional intelligence and authentic leadership, and all of the participants placed high value on subordinate input and participation in decision-making.

The first profile to be reviewed is the project manager who placed the greatest emphasis on safety as a project implementation strategy. Figure 44 is a representative

profile of a project manager who placed the highest priority on safety during the project implementation phase.

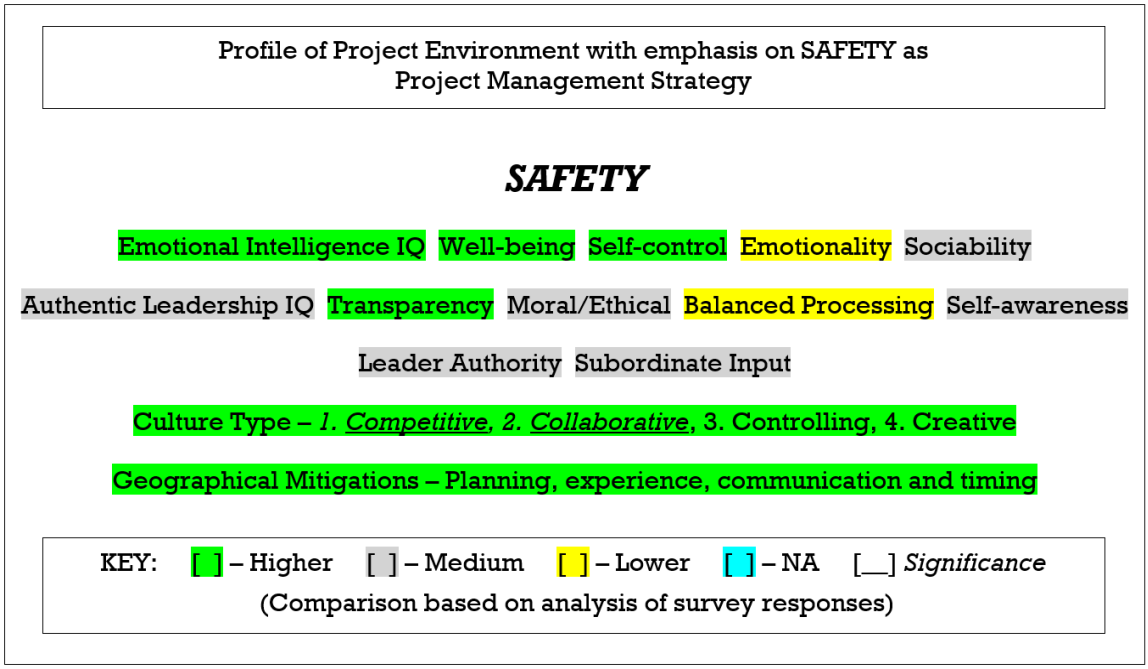


Figure 44. Project Manager Profile for Safety Project Planning Strategy

High emotional intelligence quotient, high well-being, high self-control, and high transparency are all unique characteristics associated with this profile. The safety strategy is especially vulnerable to geographical hazards.

An organization that is plagued with safety violations and injuries may consider providing training to enhance emotional intelligence quotient with special concentration on well-being and self-control. In fact, organizations may consider a wellness program that promotes healthy living and safety. Organizations may consider supplemental training in the area of safety that builds confidence in the project manager's ability to make important decisions that direct the efforts of field personnel in a safe and productive manner. Furthermore, organizations may encourage project managers to reach out to stakeholders, team members and subordinates for input as they promote safe work

execution. “Project leaders have to make safety part of their daily project monitoring and control processes” (Bulger, 2012, p. 23). Based on the research, authentic leadership has only a moderate effect on a project manager’s emphasis on safety.

Organizations may consider training project managers to recognize geographical factors that impact safety. The rugged and unforgiving landscape of Alaska is not something to be taken lightly. An innocent error can quickly become a fatal mistake in the last frontier. It’s important for project managers, project teams, contractors, and stakeholders to collaborate in this area. Based on the literature review and research, safety is influenced by geography. Thus, planning for safe work execution must take into account the hazards of geography in the state of Alaska. Appendix H provides several examples of geographical factors that influence the safety and security of field personnel.

One of the examples in Appendix H deals with the geographical factor, animals. An example of fatal bear attacks is provided in the appendix. This researcher is familiar with the dangers of working in isolated areas inhabited by bears. When working in these areas, planning includes hiring security personnel equipped with shotguns to protect the field contractors. Such measures are necessary to prevent encounters that could derail a pipeline maintenance project and put workers in harm’s way. Planning for geographical hazards is an important part of the project managers job when it comes to safety.

The second profile to be reviewed is the project manager who placed the greatest emphasis on quality as a project implementation strategy. Figure 45 is a representative profile of a project manager who placed the highest priority on quality during the project implementation phase.

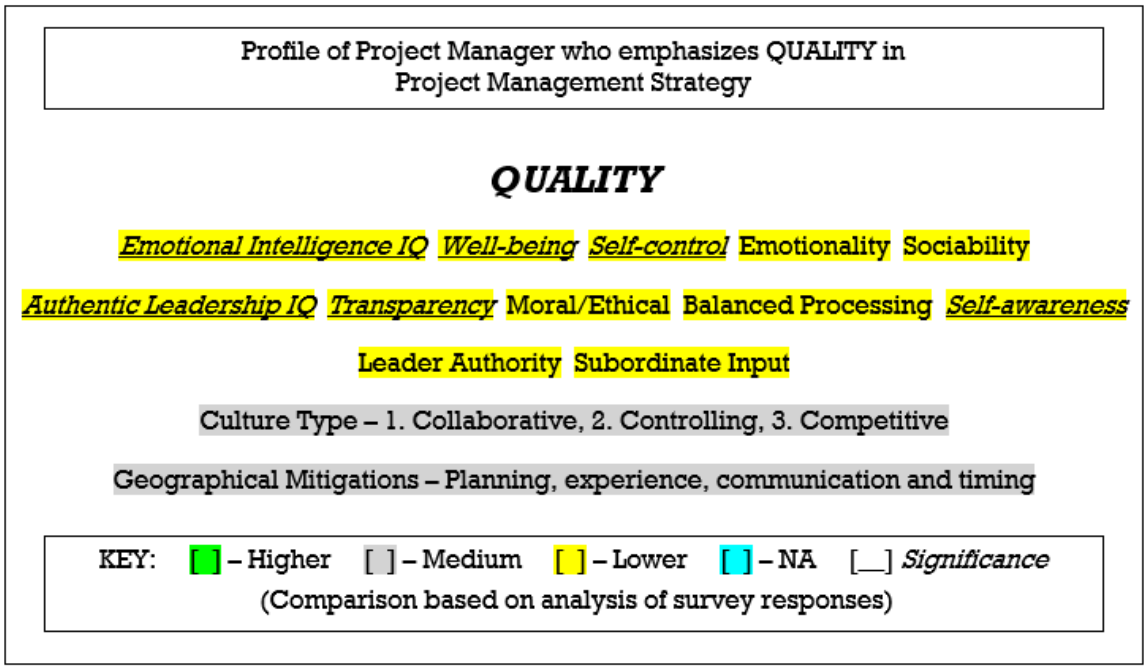


Figure 45. Project Manager Profile for Quality Project Planning Strategy

Low overall emotional intelligence, low overall authentic leadership, low leader authority and low subordinate input are all unique characteristics associated with this profile.

An organization that struggles to complete projects that satisfy project objectives may suffer from a lack of quality. In these instances, the organization may consider technical training that emphasizes the importance of quality. Based on the research, emotional intelligence and authentic leadership have little effect on a project manager's emphasis on quality. In fact, project managers who emphasized quality as a project strategy scored lower in these areas.

Organizations may consider training project managers to recognize geographical factors that negatively affect quality. Hiring craftsmen with experience in Alaska is an important consideration when quality is essential to meeting project objectives. The unpredictable and harsh conditions of Alaska can cause field personnel to take shortcuts that compromise quality. Recognizing the potential for these shortcuts and creating hold-

points for inspection should be considered by project managers and construction supervisors. As noted earlier, geographical elements can become a distraction to the project manager and project team if not planned for in the beginning. An inspection-test-plan (ITP) is one course of action that can be employed by project managers to enforce quality standards on a project.

The third profile to be reviewed is the project manager who placed the greatest emphasis on customer-satisfaction as a project implementation strategy. Figure 46 is a representative profile of a project manager who placed the highest priority on customer-satisfaction during the project implementation phase.

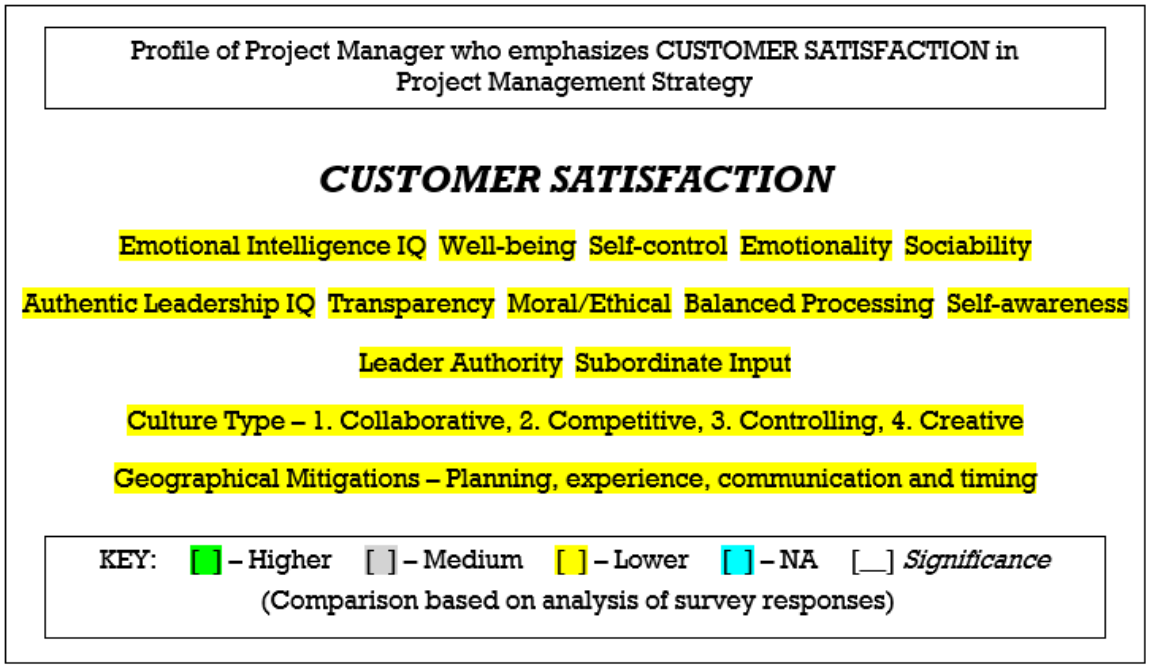


Figure 46. Project Manager Profile for Customer-Satisfaction Project Planning Strategy

Low overall emotional intelligence, low overall authentic leadership, low leader authority and low subordinate input are all unique characteristics associated with this profile.

An organization that struggles to complete projects that meet customer expectations is likely a project that's failed to meet project objectives. Missing the mark

on scope, schedule, budget, safety, or quality can leave a bad taste in the customer's mouth. In these situations, the organization may consider hosting a lessons-learned session that brings the unknown issues to the surface. "Knowledge acquired from earlier projects can be reused and recombined to solve similar or related problems at a later time" (Choo, 2014, p. 1466). Understanding the customer's perspective on issues can enhance the project manager's methods on future projects. On many occasions, something as simple as a misunderstanding regarding paint color can leave a customer dissatisfied. In such instances, it becomes obvious that details matter. Based on the research, emotional intelligence and authentic leadership have little effect on a project manager's emphasis on customer satisfaction.

Organizations may consider emphasizing the importance of details when planning for geographical factors that may negatively impact customer satisfaction. Regional knowledge becomes an important consideration when planning mitigations for potential geographical hazards. Poor planning and overlooked details can impact a projects momentum and lead to rework. If the customer is an external stakeholder, litigation is a potential outcome that is not preferred. For instance, failure to obtain a special permit can lead to lawsuits and fines. Litigation is also a possibility when the customer is a client. For instance, liquidated damages associated with a missed deadline can be enforced in a court of law and result in costly penalties.

Limitations

Project management is a limited topic when it comes to formal research. The methods and processes used by project managers are based mostly on trial and error. Those processes that have worked over time have been captured by multiple consortiums and formalized into official guidance documents. The Project Management Institute (PMI) has done an excellent job of gathering this data and generating processes that support the project management profession. However, research on the topic is limited. The outcome of this research effort should add to the current body of knowledge and set the stage for additional research on the topic. Establishing a link between project strategies and project environments was one goal of this research effort. The target of this research was focused on the state of Alaska.

Project Participants

This research was limited to project managers and construction personnel who have worked or were working in the state of Alaska. The data and resultant analyses are thereby limited to the 49th state of the union. The descriptive summaries and strategy profiles provided in the previous section are an accurate reflection of project managers and project leaders working in the Last Frontier. The focus of this research was placed on the researcher's home state of Alaska for several reasons.

A larger research effort would have taken additional time and resources that were unavailable to the researcher. A larger research effort would have required formal sponsorship and support from the Project Management Institute. "PMI research grants support new academic research with the intent to advance knowledge in project, program and portfolio management. Proposed research must have direct application to some

aspect of the project management body of knowledge or its practice" (https://www.pmi.org/learning/academic-research/sponsored). With that being the case, a prospective target for future research might be the entire Pacific Northwest region of the United States.

The Pacific Northwest would typically include Alaska, Washington, and Oregon. Hawaii could be added to this trio since Hawaii is unique and noncontiguous to the Lower 48 states. This wider target may reveal differences between project managers living in the 48 contiguous states and those living in Alaska and Hawaii. Project managers working in these different regions may face unique project environments that require different strategies.

An even larger target for future research might be the entire United States. Florida, Texas, Ohio, New York, Illinois, Minnesota, Idaho, and California are all unique states that could be included in the study. Supplemental research questions may include: How do project managers in the Midwest prioritize safety compared to project managers in the South? Is there a difference between geographical factors on the East coast and West coast? Does project managers' emotional intelligence remain the same or differ from the North to the South? The scope of research might even be expanded to encompass a global group of project managers. Project managers working in Africa, Australia, Russia, and Canada are all potential candidates.

Another potential avenue of research would be to explore the project management strategies used by particular organizations or business types. For instance, commercial projects and industrial projects differ on many fronts including stakeholders. How do

their project environments differ? Another possibility would be to explore the project management strategies used in two different regions under the same organization.

The scope for future research is wide open for those who choose to explore the topic and add to the body of knowledge. For now, the conclusions and recommendations presented by this researcher can serve as a starting point to continuous improvement in the project management profession worldwide.

Project Environments

This researcher intended to make a connection between project strategies (performance factors) and three project environmental elements: project manager, project sponsor, and project location. These three elements are comprised of four project environmental constituents: leadership, emotional intelligence, organizational culture, and geography. These four constituents were consistently highlighted throughout the literature review. For that reason, these four components became the focus of the research effort. However, project environments are complicated and additional constituents are worthy of consideration in future studies.

Politics.

Politics is a noteworthy component that is growing in strength as more and more projects fall victim to political agendas. This has certainly been the case on several large projects in the state of Alaska. The Arctic National Wildlife Refuge (ANWR) has been a source of controversy since the mid-1970's (Strohmeyer, 1997). The 19-million-acre preserve is thought to contain between 40 and 50 billion barrels of oil according to the Alaska Resource Development Council [ARDC] (ARDC, 2019a). Multiple projects have been proposed to commence drilling operations in ANWR. The political will of those

who oppose drilling in the refuge has prevented opening ANWR for drilling to this day (see Appendix J). Pebble mine is another project that has been met with opposition each step of the way.

The Pebble deposit was discovered in 1987 according to the ARDC (ARDC, 2019b). The ore consists of copper, gold, molybdenum and silver. The location of the proposed mine is in Southwest Alaska in an area known as Bristol Bay. This region has the world's largest salmon run, and much of the opposition to the project is based on potential negative impacts to the salmon run (see Appendix K).

The politics promoted by climate change advocacy groups and environmental protection activists are also powerful components that are beginning to impact project management in the Last Frontier. Proponents of climate change cite shrinking sea ice, thawing permafrost, and increasing wildfires as evidence of climate change. It's difficult to argue with these facts, but the real disagreement has to do with the cause of climate change. Is it a natural cycle or is it man-made? "The Earth's climate is always changing. It has gone through warm and cold periods, each lasting thousands of years" (Pasian, 2017, p. 2). The political establishment is divided on this issue and this has a negative impact on resource development projects in the state of Alaska (see Appendix L).

Technology.

Technology is another important component that is influencing project environments and growing in strength. Technology was considered in this research as an element of human geography. However, the growth of technology as a force in the modern world has made it a standalone component that should be considered by future researchers. This researcher has witnessed the application of various technologies to the

project management profession in the state of Alaska in increasing measure over the past ten years.

Advances in geophysics has made ground penetrating radar (GPR) a go-to technology for locating underground obstructions in a matter of hours (see Appendix M). In the past, hundreds of manhours would be expended to excavate and expose underground obstructions as a precursor to scope development. Geophysics applications include: "geological surveys (depth to bedrock, finding gravel, imaging permafrost), metal detection, utility location, concrete imaging, archaeological surveys, contaminant mapping, underground storage tank location, landfill mapping, snow and ice surveys, ice thickness measurements, blast and vibration monitoring, and borehole geophysics" (Logic Geophysics Analytics, 2019, para. 4).

Advances in drone technology have made aerial inspection and photography a routine activity. Drones are being used to inspect both offshore and onshore structures including pipeline right-of-way's and potential leaks (see Appendix N). In the past, fixed-wing aircraft or helicopters would be used to perform these same inspections. Recently, this researcher used drone technology to generate aerial plot plans for a 160-acre project site in Kenai, Alaska.

Information Management.

Advances in information technology (IT) and geographical information systems (GIS) have had a profound impact on project management. For example, these systems are used to document right-of-way's, physical structures, ownership boundaries, and landforms (see Appendix O). It's possible to obtain this information with a single key stroke today. In the past, weeks of research and inquiry would be necessary to discover

the unique features of a property. Today, most organizations have a GIS department that is responsible for maintaining geographic information related to organizational assets.

Communication.

Advances in telecommunication networks including long term evolution (LTE), Alaska wireless networks (AWN), satellite, and internet continue to change the landscape. In fact, plans are in place to establish 5G (5^{th} generation) wireless technology throughout the state of Alaska by 2020 (see Appendix P). Such changes enable project managers to communicate across long distances with stakeholders in the Lower 48 and Canada.

Politics, technology, information management, and communication are just a few examples of topics that can be researched in the future. Each of these components has the potential to impact project management as they prove to be valid constituents of the project environment.

Project Strategies

The project strategies chosen for this research effort surfaced during the literature review and were divided into two categories, the planning phase and the execution or implementation phase. The planning phase focused on three elements comprising what is commonly referred to as the 'iron triangle' or the 'triple constraint'. Scope, schedule, and budget are important project performance factors considered during the planning phase.

During the planning phase, the project manager must define the scope of the project and understand the activities necessary to fulfill the requirements of the scope. The project manager must also establish a timeline for accomplishing the scope. Activity

durations and critical milestones form the foundation of the schedule. Lastly, the project manager must translate the initial scope and schedule into an accurate cost estimate. The resultant budget must be closely managed to ensure materials, equipment, and labor are being resourced in a timely manner.

The implementation phase focused on three elements that surfaced during the literature review. Safety, quality, and customer satisfaction are important project performance factors considered during the implementation or execution phase. Safe work execution is at the top of the list when it comes to project implementation. Today, a disregard for safety will quickly lead to expulsion from the jobsite. Quality is another important consideration. A neglect for quality results in regret, rework, and other undesired repercussions. Lastly, ignoring the customer's desires or failing to meet their expectations is a huge mistake. Oftentimes, project success is determined by the customer's perceptions. It's been said, "if the customer isn't happy, then nobody's happy". This statement contains a lot of truth.

While not included in this study, the coupling of the planning and implementation strategies would yield 36 combinations or strategies that could be espoused during the project management process. Based on these combinations, future research could be undertaken to understand the unique characteristics of each of the strategies. Supplemental project strategies could also be included in a future research effort.

Bid Solicitation.

Bid inquires and requests for budgetary cost estimates are common planning strategies for project managers. The solicitation of bids might be a potential planning strategy to be researched based on differences in the project environment. Bid

solicitation is conducted in different manners depending on the project environment. Competitive bidding is a common practice in many places; sole-source bid solicitation from approved vendors is another common practice.

Contracting.

On a similar note, contracting strategy is a potential strategy to be researched. Two contract types are used routinely on projects in Southcentral Alaska, time-and-materials and fixed-fee. The Endicott oil field in Northern Alaska was constructed using fixed-fee contracts. "The project team used three types of contracts to execute the construction work packages. These were cost reimbursable fixed fee, fixed unit price, and fixed lump sum price" (Flones, 1987, p. 46). An understanding of the environment including contractor availability and experience is important prior to selecting a contracting strategy.

Project Inspection.

As far as project implementation is concerned, the inclusion of a project inspector might be a potential implementation strategy to be researched based on differences in the project environment. Many projects are executed without a formal job-site inspector. In other instances, third party inspectors are hired to provide inspection services throughout the implementation of a project.

Productivity.

Another project implementation topic for future research is productivity. Productivity is defined as "the maximization of output while optimizing input" (Naoum, 2016, p. 401). Productivity is a sensitive subject and is rarely discussed as a project implementation strategy. Nevertheless, productivity is a matter of fact, and

understanding what makes a project productive or efficient is important for project success. The topic is especially sensitive for projects deciding whether to employ union or non-union crafts. The productivity rates and costs for these crafts are important for controlling project costs and estimating TIC (total installed costs).

Project participants, project environments, and project strategies were all limitations associated with the scope of this research. Nevertheless, the findings and conclusions gathered as a result of this research are invaluable in understanding project environments and their impacts on project strategy.

Implications and Recommendations

Every environment is shaped by the combination of unique elements comprising that environment. Project environments are no different; tangible and intangible elements comprise the project environment. The crux of this research effort explored just a few of the unique elements that make up the project environment. The impact of these elements or constituents on project strategy was revealed as a result of the research effort. The first three constituents, authentic leadership, decision-making style, and emotional intelligence are related specifically to the project manager; the project manager is a major part of the project environment. The fourth constituent, organizational culture, is related to the project sponsor. The fifth constituent, geography, is related to the project location. Together, these five elements were the focal point of the proposed research questions.

The following tables provide a brief synopsis of the research findings. Table 33 is a snapshot of the project environment for three different planning strategies. Table 34 is a snapshot of the same project environment for three different implementation strategies.

Table 33

Project Environment vs. Planning Strategy Priority

Summary of Findings

Environmental Constituent	Scope	Schedule	Budget
RQ1 Authentic Leadership	Higher	Lower*	Moderate
● *Transparency*	Higher	Lower	Higher
● *Moral-Ethical*	Higher	Lower*	Moderate
● *Balanced Processing*	Higher*	Lower	Lower
● *Self-Awareness*	Higher	Lower	Moderate
RQ1 Decision-Making Style	NA	NA	NA
● *Decision Authority*	Lower	Higher	Higher
● *Subordinate Input*	Higher*	Lower	Lower
RQ2 Emotional Intelligence	Higher	Moderate	Lower
● *Well-being*	Higher	Lower	Lower
● *Self-control*	Higher	Higher	Lower
● *Emotionality*	Higher	Moderate	Lower
● *Sociability*	Higher	Lower	Moderate
RQ3 Organizational Culture	NA	NA	NA
● Collaborative	Most Important (78%)	Least Important (55%)	Important (54%)
● Competitive	Most Important (58%)	Least Important (64%)	Important (50%)
● Controlling	Most Important (82%)	Important (47%)	Least Important (53%)
● Creative	Most Important (76%)	Least Important (54%)	Important (46%)
RQ4 Geography	Lowest Impact	Highest Impact	Moderate Impact
● *Physical Geography*	Lowest Impact	Highest Impact	Moderate Impact
● *Human Geography*	Lowest Impact	Highest Impact	Moderate Impact

Note. * denotes significant finding using inferential statistics.

Table 34

Project Environment vs. Implementation Strategy Priority

Summary of Findings

Environmental Constituent	Safety	Quality	Customer Satisfaction
RQ1 Authentic Leadership	Moderate	Lower*	Lower
● *Transparency*	Higher	Lower*	Lower
● *Moral-Ethical*	Moderate	Lower	Lower
● *Balanced Processing*	Lower	Lower	Lower
● *Self-Awareness*	Moderate	Lower*	Lower
RQ1 Decision-Making Style	NA	NA	NA
● *Decision Authority*	Moderate	Lower	Lower
● *Subordinate Input*	Moderate	Lower	Lower
RQ2 Emotional Intelligence	Higher	Lower*	Lower
● *Well-being*	Higher	Lower*	Lower
● *Self-control*	Higher	Lower*	Lower
● *Emotionality*	Lower	Lower	Lower
● *Sociability*	Moderate	Lower	Lower
RQ3 Organizational Culture	NA	NA	NA
● Collaborative	Most Important (84%)	Important (60%)	Least Important (58%)
● Competitive	Most Important (89%)	Important (53%)	Least Important (53%)
● Controlling	Most Important (65%)	Important (56%)	Least Important (50%)
● Creative	Most Important (58%)	Least Important (42%)	Least Important (50%)
RQ4 Geography	Highest Impact	Moderate Impact	Lowest Impact
● *Physical Geography*	Highest Impact	Moderate Impact	Lowest Impact
● *Human Geography*	Highest Impact	Moderate Impact	Lowest Impact

Note. * denotes significant finding using inferential statistics.

Based on the Table 33, project managers who emphasized scope, scored higher in overall authentic leadership and emotional intelligence than project managers who emphasized schedule or budget. Project sponsors with a controlling culture placed the most emphasis on scope, and project location had the least impact on scope. This same approach can be used to scan the data for those who emphasized schedule and budget.

Based on the Table 34, project managers who emphasized safety, scored higher in transparency and overall emotional intelligence quotient than project managers who emphasized quality or customer satisfaction. Project sponsors with a competitive culture placed the most emphasis on safety, and project location had the most impact on safety. Once again, this same approach can be used to scan the data for those who emphasized quality and customer satisfaction.

Recognizing the elements that comprise the project environment is the first step toward project strategy attunement. Governing or controlling those elements is the second step. The space between recognition and governance is dependent on the organizational entity, business unit, and project management office.

Closing Thoughts

This research effort explored both familiar and unfamiliar territory. This researcher is an experienced project manager familiar with the challenges of Alaska's rugged and changing environment. The planning and execution of projects within the state of Alaska is a normal process used to achieve organizational goals. The invisible aspects of project management including project managers' emotional intelligence and authentic leadership are not fully known at this time. However, this research has primed the pump for future research efforts in these areas.

Project management is an important profession in the state of Alaska. Resource development, infrastructure improvement, and disaster recovery are all beneficiaries of the project management profession. Alaska is a one-of-a-kind state, and this uniqueness spills over to the people living and working in the Last Frontier. In this researcher's opinion, the greatest resource in the state of Alaska is its people. Petrov and Cavin have suggested a regional policy that should result in situatedness. "Situatedness [includes] appreciation of local knowledge, promotion of local initiative, devolution of control, development of a knowledge-based economy, and so forth" (2013, p. 348). This suggestion does well to align the people with the place, and the place with the people. Project strategy and performance is dependent on this alignment and situatedness.

The value of situatedness is a product of Alaska (the place) and its people. The relationship that exists between the people and the place have comprised the foundation of this research topic. Project framing, risk identification, stakeholder engagement, and basis of design are important considerations for those working in the Last Frontier (Mole et al., 2013). Leadership, emotional intelligence, organizational culture, and geography are all connected at different levels for different reasons. The concept map in Figure 8 demonstrates the continuity of relationship in each of these areas that comprise project environments. The project manager, the project sponsor, and the project location are all related. Project success is dependent on these relationships. It's in the best interest of businesses and organizations to understand and master these relationships. The output of this research provides a reliable context and credible stepping stone for this understanding and mastery.

REFERENCES

Adams, S. (2009). The four stages of effective team-building. Training & Management Development Methods, 23(1), 317-321, doi:10.1108/09513500910933273.

Ahuja, H., Dozzi, S.P., Abourizk, S.M. (1994). Project management: Techniques in planning and controlling construction projects, Second edition. New York, NY: John Wiley & Sons, Inc.

Air quality and visibility: How you can tell if the air is healthy. (2019, August 1). KTVA News. Retrieved from https://www.ktva.com/story/40947304/air-quality-and-visibility-how-you-can-tell-if-the-air-is-healthy

Alam, M., Gale, A., Brown, M., Khan, A.I. (2010). The importance of human skills in project management professional development. International Journal of Managing Projects in Business, 3(3), 495-516, doi:10.1108/17538371011056101.

Alaska 2015 wildfire season now 2nd biggest on record. (2015, August 11). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/article/2015-alaska-wildfire-season-now-second-biggest-record/2015/08/11/

Alaska Aerial Media (2019). Applications. Retrieved from https://www.akaerial.media

Alaska climate change is forcing some villages to relocate. (2019, June 18). KTUU News. Retrieved from https://www.ktuu.com/content/news/Alaska-climate-change-is-forcing-some-villages-to-relocate-511454991.html

Alaska court: Borough prayer policy violates constitution. (2018, October 9). KTUU News. Retrieved from https://www.ktuu.com/content/news/Alaska-court-Borough-prayer-policy-violates-constitution-496486781.html

Alaska Department of Fish and Game. (2018). Alaska Bears. Retrieved from http://www.adfg.alaska.gov/index.cfm?adfg=brownbear.printerfriendly

Alaska expects worker shortage as energy projects ramp up. (2018, November 1). KTUU News. Retrieved from https://www.ktuu.com/content/news/Alaska-expects-worker-shortage-as-energy-projects-ramp-up-499373401.html

Alaska GOP Gov. Dunleavy disbands state climate response team. (2019, February 23). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/02/23/alaska-gop-gov-dunleavy-disbands-state-climate-response-team/

Alaska Partnership for Economic Development. (2009). Alaska forward: Phase I situational analysis. Retrieved from https://www.commerce.alaska.gov/web/Portals/6/pub/CEDS/Alaska%20Forward%20Situational%20Analysis.pdf?ver=2016-10-11-161803-313

Alaska railroad cancels passenger service between Anchorage and Denali due to wildfire. (2019, August 19). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/2019/08/19/alaska-railroad-cancels-passenger-service-between-anchorage-and-denali-due-to-wildfire/

Alaska Resource Development Council. (2019a). Our industries – Oil and Gas. Retrieved from https://www.akrdc.org/oil-and-gas

Alaska Resource Development Council. (2019b). Our industries – Mining. Retrieved from https://www.akrdc.org/mining

Alaska's population falls for the second year in a row. (2019, January 10). KTUU News. Retrieved from https://www.ktuu.com/content/news/Alaskas-population-falls-for-the-second-year-in-a-row-504175451.html

Alias, Z., Khalid, Z., Aris, Y. (2014). Determining critical success factors of project management practice: A conceptual framework. Paper presented at the AMER International Conference on Quality of Life, Kota Kinabalu-Sabah, Malaysia. 2014. Procedia – Social and Behavioral Sciences, 153, 61-69, doi:10.1016/j.sbspro.2014.10.041.

Allen, M., Carpenter, C., Dydak, T., Harkins, K. (2016). An interpersonal project leadership model. Journal of IT and Economic Development, 7(2), 24-39.

American Airlines adding three new routes to Alaska, including first-time flights to Fairbanks. (2019, August 29). KTUU News. Retrieved from https://www.ktuu.com/content/news/American-Airlines-adding-three-new-routes-to-Alaska-including-first-time-flights-to-Fairbanks-558690231.html

American Film Institute. (2013). Star Trek, 13. Retrieved from http://americanfilm.afi.com/issue/2013/4/cover-story#.WqaqdBGWxOk

American Society of Civil Engineers. (2017). Infrastructure Report Card. Retrieved from https://www.infrastructurereportcard.org/state-item/alaska/

Anantatmula, V. S. (2010). Project manager leadership role in improving project performance. Engineering Management Journal, 22(1), 13-22.

Anca, V. (2015). Leadership: A necessity in projects. Studies in Business and Economics, Lucian Blaga University of Sibiu, Romania. Faculty of Economic Sciences, 9(2), 128-136.

Andersen, E., Birchall, D., Jessen, S., Money, A. (2006). Exploring project success. Baltic Journal of Management, 1(2), 127-147, doi:10.1108/17465260610663854.

Andersen, E., Dysvik, A., Vaagaasar, A. (2009). Organizational rationality and project management. International Journal of Managing Projects in Business, 2(4), 479-498, doi:10.1108/17538370910991106.

Angelides, D. (1999). Project management and good technical and business practices. Journal of Management in Engineering, 15(3), 78-90.

Annual 49th native youth Olympics kicks off in Anchorage. (2019, April 25). KTUU News. Retrieved from https://www.ktuu.com/content/news/49th-Annual-Native-Youth-Olympics-kicks-off-in-Anchorage-509091942.html

Applebaum, M. (2016). Weather the storm: Infrastructure projects can cushion the blow of extreme weather events – if project managers can navigate the uncertainty of a changing climate. PM Networks, 30(4), 62-67.

Artto, K., Kujala, J., Dietrich, P., Martinsuo, M. (2008b). What is project strategy. International Journal of Project Management, 26(1), 4-12.

Artto, K., Martinsuo, M., Dietrich, P., Kujala, J. (2008a). Project strategy: Strategy types and their contents in innovation projects. International Journal of Managing Projects in Business, 1(1), 49-70. doi.org.trevecca.idm.oclc.org/10.1108/17538370810846414.

Ashkanasy, N., Dasborough, M. (2003). Emotional awareness and emotional intelligence in leadership teaching. Journal of Education for Business, 79(1), 18-22.

Attarzadeh, I., Ow., S. (2008). Project Management Practices: The criteria for success or failure. International Symposium on Information Technology, Lumpug, Malaysia, 1. doi:10.1109/itsim.2008.4631634.

Aubry, M., Lievre, P. (2010). Ambidexterity as a competence of project leaders: A case study from two polar expeditions. Project Management Journal, 41(3), 32-44. doi:10.1002/pmj.20183.

Avolio, B., Gardner, W. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. Leadership Quarterly, 16(3), 315-338.

Avolio, B., Gardner, W., Walumbwa, F. (2007). Authentic Leadership Questionnaire Research. Menlo Park, CA.: Mind Garden.

Axson, D. A. J. (2010). Best practices in planning and performance management: Radically rethinking management for a volatile world. New York, NY: John Wiley & Sons

Bachelard, G. (2014). The poetics of space -M. Jolas Translation. New York, NY: Penguin Books.

Ballesteros-Perez, P., Smith, S., Lloyd-Papworth, J., Cooke, P. (2018). Incorporating the effect of weather in construction scheduling and management with sine wave curves: application in the United Kingdom. Construction Management and Economics. https://doi.org/10.1080/01446196.2018.1478109

Barber, E., Warn, J. (2005). Leadership in project management: from firefighter to firelighter. Management Decision, 43(7/8), 1032-1039. doi:10.1108/00251740510610026

Bar-On, R., Parker, J. (2000). The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace, 1st Edition, San Francisco, CA: Jossey-Bass.

Basillo, L. (June 2017). Managing your offshore project: Front end loading and cost accuracy. Retrieved from https://www.oilandgasiq. com/strategy-management-and-information/articles/managing-your-offshore-project-front-end-loading

Bastons, M. (2008). The role of virtues in the framing of decisions. Journal of Business Ethics, 78, 389-400, doi:10.1007/s10551-006-9332-x.

Batool, B. (2013). Emotional intelligence and effective leadership. Journal of Business Studies Quarterly, 4(3), 84-96.

Bellot, J. (2011). Defining and assessing organizational culture. Nursing Forum, 46(1), 29-37, doi:10.1111/j.1744-6198.2010.00207.x

Belu, D. (2009). Emotional intelligence and negative emotions conversion. Retrieved from http://www.afahc.ro/ro/revista/Nr_1_2009/Art_Belu.pdf

Bennis, W. (2009a). Crises reveal the quality of leadership. Leader to Leader, 9(54), 27-31.

Bennis, W. (2009b). On Becoming a Leader. New York, NY. Basic Books.

Bennis, W., Ward Biederman, P. (2011). My earliest experiences in leadership. Leader to Leader, 2011(59), 27-32, doi:10.1002/ltl.452.

Berkley, J.D. (2007). Leadership handbook of management & administration. Grand Rapids, MI: Baker Books

Besner, C., Hobbs, B. (2006). The perceived value and potential contribution of project management practices to project success. Project Management Journal, 37(3), 37-48.

Black bear kills mine worker, injures another in Interior Alaska. (2017, June 19). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/2017/06/19/officials-fatal-bear-mauling-reported-at-pogo-mine-near-delta-junction/

Blattner, J., Bacigalupo, A. (2007). Using emotional intelligence to develop executive leadership and team and organizational development. Consulting Psychology Journal, 59(3), 209-219, doi:10.1037/1065-9293.59.3.209.

BLM released final ANWR environmental impact statement. (2019, September 12). KTUU News. Retrieved from https://www.ktuu.com/content/news/Bureau-of-Land-Management-released final-impact-for-ANWR-sales-560167671.html

Bourne, L., Walker, D. H. T. (2008). Project relationship management and the stakeholder circle (TM). International Journal of Managing Projects in Business, 1(1), 125-130, doi:10.1108/17538370810846450.

Boyatzis, R., Rochford, K., Cavanagh, K. (2017). Emotional intelligence competencies in engineer's effectiveness and engagement. Current Development International, 22(1), 70-86, doi:10.1108/CDI-08-2016-0136.

BP pullout could affect state revenue. (2019, August 28). KTUU News. Retrieved from https://www.ktuu.com/content/news/Hilcorp-buying-BP-Alaska-could-see-state-revenue-lost-but-increased-production-could-help-558636141.html

Bratton, V., Dodd, N., Brown, W. (2011). The impact of emotional intelligence on accuracy of self-awareness and leadership performance. Leadership & Organization Development Journal, 32(2), 127-149, doi:10.1108/01437731111112971.

Bredillet, C. N. (2008). Exploring research in project management: Nine schools of project management research (part 6). Project Management Journal, 39(3), 2-5. doi:10.1002/pmj.20073

Bredillet, C. N. (2010). Blowing hot and cold on project management. Project Management Journal, 41(3), 4-20, doi:10.1002/pmj.20179.

Brewer, G., Strahorn, S. (2012). Trust and the project management body of knowledge Engineering, Construction and Architectural Management, 19(3), 286-305. doi:10.1108/09699981211219616.

Bross, D. (2017). GCI launches cell tower near Coldfoot, KUAC Alaska Public Radio. Fairbanks, Alaska. Retrieved from https://www.alaskapublic.org/2017/08/08/gci-launches-cell-tower-near-coldfoot/

Brown bear sow with cubs kills mine worker in Southeast Alaska. (2018, October 1). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/wildlife/2018/10/01/person-reported-dead-in-bear-mauling-near-southeast-alaska-mine-troopers-say/

Brown, F., Moshavi, D. (2005). Transformational leadership and emotional intelligence: a potential pathway for an increased understanding of interpersonal influence. Journal of Organizational Behavior, 26(1), 867-871. doi: 10.1002/job.334.

Buch, K., Wetzel, D. (2001). Analyzing and realigning organizational culture. Leadership & Organization Development Journal, 22(1), 40-44.

Bulger, B. (2012). Playing it safe. PM Network, 26(12), 23-24.

Burba, D. (2016). Danger signs. PMI Network, 30(9), 48-53.

Burek, P. (2011). Influence of the scope statement on the WBS. Paper presented at PMI Global Congress, Dallas, Texas. 2011. Newtown Square, PA: Project Management Institute.

Burgan, S.C., Burgan, D.S. (2014). One size does not fit all: Choosing the right project approach. Paper presented at PMI Global Congress, Phoenix, AZ. 2014. Newtown Square, PA: Project Management Institute.

Cameron, K., Quinn, R. (2011). Diagnosing and changing organizational culture: Based on the competing values framework, Third edition. Hoboken, NJ: John Wiley & Sons.

Castree, N., Kitchin, R., Rogers, A. (2013). Human geography: In a dictionary of Human Geography. Retrieved from https://researchguides.dartmouth.edu/human_geography

Chan, A. P. C., Scott, D., Chan, A. P. L. (2004). Factors affecting the success of a construction project. Journal of Construction Engineering & Management, 130(1), 153-155.

Cheung, S., Wong, P., Lam, A. (2012). An investigation of the relationship between organizational culture and the performance of construction organizations. Journal of Business Economics and Management, 13(4), 688-704. doi:10.3846/16111699.2011.620157

Choo, A. (2014). Defining problems fast and slow: The U-shaped effect of problem definition time on project duration. Production and Operations Management, 23(8), 1462-1479.

Chopra, P., Kanji, G. (2010). Emotional intelligence: A catalyst for inspirational leadership and management excellence. Total Quality Management, 21(10), 971-1004, doi:10.1080/14783363.2010.487704.

Choudry, R., Fang, D., Mohamed, S. (2007). Developing a model of construction safety culture. Journal of Management in Engineering, 23(4), 207-212. doi:10.1061/(ASCE)0742-597X(2007)23:4(207).

Christenson, D., Walker, D. H. T. (2004). Understanding the role of "vision" in project success. Project Management Journal, 35(3), 39-52.

Christenson, D., Walker, D. H. T. (2008). Using vision as a critical success element in project management. International Journal of Managing Projects in Business, 1(4), 611-622.

Clarke, P. (2009). Leadership, beyond project management. Industrial and Commercial Training, 41(4), 187-194. doi:10.1108/00197850910962760.

Clayton, M. (2016). How to win at project politics. Retrieved from https://projectmanager.com/blog/how-to-win-project-politics.

Cleland, D.I. (1985). Prudent and reasonable project management: complementary aspects of project control. Project Management Journal, 16(5). 90-97.

Cleland, D., King, W. (1997). Project management handbook. New York, NY: John Wiley & Sons, Inc.

Cobb, A. (2006). Leading project teams: An introduction to the basics of project management and project team leadership. Thousand Oaks, CA: Sage Publications.

Collyer, S. (2016). Culture, communication, and leadership for projects in dynamic environments. Project Management Journal, 47(6), 111-125.

Connor, B., Harper, J. (2013). How vulnerable is Alaska's transportation to climate change? Transportation Research Center, Jan-Feb 2013, 23-29.

Craig, K. (2006, May). The five flavors of project management leadership. Contractor Magazine, 1, 66-67.

Craig, K. (2007, May). Outcome, not output, is what matters. Contractor Magazine, 1, 60, 70.

Craig, K. (2009, March). Project management is an adventure. Contractor Magazine, March 1, 40-41.

Craig, A. (2018, March). Open doors: Even when projects move fast, take the time to provide honest updates. PM Network, 32(3), 25.

Creswell, J. (2013). Steps in conducting a scholarly mixed methods study. DBER Group Discussion on 2013-11-14. Retrieved 2018 from http://digitalcommons.unl.edu/dberspeakers/48

Creswell, J. (2014). Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage Publications.

Crews reopen Denali Park Road after mudslides, water damage; stranded tourists leave. (2019, August 16). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/2019/08/17/mudslides-leave-300-tourists-stranded-in-denali-national-park/tml

Davis, S. (2011). Investigating the impact of project managers' emotional intelligence on their interpersonal competence. Project Management Journal, 42(4). 37-57.

Dearborn, K. (2002). Studies in emotional intelligence redefine our approach to leadership development. Public Personnel Management, 31(4), 523-530.

Democrats on US House committee move anti-drilling ANWR bill. (2019, May 2). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/05/02/democrats-on-us-house-committee-move-anti-drilling-anwr-bill

Diedericks, P. (2009). Leveraging innovation for sustainable construction: Optimizing winter construction. Retrievedfrom http://www.irbnet.de/daten/iconda/CIB15691.pdf

Dimov, P.I. (2004). Leadership, when management is not enough. Paper presented at PMI Global Congress, North America, Anaheim, CA. 2004. Newtown Square, PA: Project Management Institute.

Divided Alaska Legislature convenes session in 2 cities. (2019, July 8). KTUU News. Retrieved from https://www.ktuu.com/content/news/Divided-Alaska-Legislature-convenes-session-in-2-cities-512418282.html

DiVincenzo, T. (2006). Project managers stay in charge and out front. Occupational Outlook Quarterly, 50(2), 19-26.

Drouin, N., Jugdev, K. (2014). Standing on the shoulders of strategic management giants to advance organizational project management. International Journal of Managing Projects in Business, 7(1), 61-77, doi:10.1108/IJMPB-04-2013-0021

Dubois, M., Hanlon, J., Koch, J., Nyatuga, B., Kerr, N. (2015). Leadership styles of effective project managers: Techniques and traits to lead high performance teams. Journal of Economic Development, Management, IT, Finance and Marketing, 7(1), 30-46.

Dytczak, M., Ginda, G., Szklennik, N., Wojtkiewicz, T. (2013). Weather influence – aware robust construction project structure. Procedia Engineering, 57(2013), 244-253. doi:10.1016/j.proeng.2013.04.034.

Earthquake, 7.0, aftershocks strike Southcentral Alaska; damaged reported across region. (2018, November 30). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

Edmonson, A. (June 2016) Wicked problem solvers. Retrieved from https://hbr.org/2016/06/wicked-problem-solvers

Els, M., Van der Merwe, M.F., Hauptfleisch, A.C. (2012). Critical success criteria and success factors in project management: A quest to enhance generic professional practice to advance organizational project management. Bloemfontein, South Africa: Department of Quantity Surveying and Construction Management. ICEC2012-36.

EPA administrator says he will not make Pebble Mine decision. (2019, August 22). KTUU News. Retrieved from https://www.ktuu.com/content/news/EPA-administrator-says-he-will-not-make-Pebble-Mine-decision-557954791.html

Eschenbach, T. (2013). Movement is life: Organizations, management, and leadership. Engineering Management Journal, 25(4), 3-4.

Esler, D. (2011). An Alaska weather primer. Business & Commercial Aviation, 107(4), 34.

Evacuation orders eased on Kenai Peninsula, pilot cars gone as rain moderates wildfire. (2019, September 3). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/weather/2019/09/03/evacuation-orders-eased-on-kenai-peninsula-pilot-cars-gone-as-rain-moderates-wildfire/

Evangelists win rights to proselytize in city park. (2018, December 11). KTUU News. Retrieved from https://www.ktuu.com/content/news/Evangelists-win-right-to-proselytize-in-city-park-502514021.html

Ewers, L. (2013). Logistics: Critical for remote projects. Paper presented at the 10th International Symposium on Cold Regions Development. Anchorage, AK. 2013. Reston, VA: American Society of Civil Engineers.

Fare, R., Grosskopf, S., Lovell, C. (1994). Production Frontiers. New York, NY: Cambridge University Press.

Fay, G. (June 2003). Alaska Conservation Alliance. A history of Alaska's mega projects. Retrieved from https://inletkeeper.org/wp-content/uploads/2017/10/Alaska-Mega-Projects-final-0603.pdf

Federal Emergency Management Agency [FEMA] (2018). Flooding in Alaska: What you should know. Retrieved from https://fema.gov/news-release/2006/12/01/flooding-alaska-what-you-should-know

FEMA officials tour Matanuska River in roll out of $4.2 million flood mitigation program. (2019, April 24). KTUU News. Retrieved from https://www.ktuu.com/content/news/FEMA-officials-tour-site-of-42-million-dollar-flood-mitigation-program-509039361.html

Ferrada, X., Serpell, A. (2016). Using organizational knowledge for the selection of construction methods. International Journal of Managing Projects in Business, 6(3), 604-614.

Fewell, J. (2016). No size fits all. PM Network, 30(7), 24-25, Newtown Square, PA: Project Management Institute.

Fister, G. (2011) Custom fit. PM Network, 25(10), 50-54.

Fister-Gale, S. (2011) Extreme project management. PM Network, 25(6), 26-32.

Flones, P.F. (1987). Endicott oil field. Project Management Journal, 18(5), 41-50.

Flood watch issued for Denali National Park and nearby areas. (2019, August 12). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/weather/2019/08/12/flood-watch-issued-for-denali-national-park-and-nearby-areas/

Flyvbjerg, B., Budzier, A. (September 2011) Why your IT project may be risker than you think. Retrieved from https://hbr.org/2011/09/why-your-it-project-may-be-riskier-than-you-think

Freeman, J. (2017) Climate & Construction. Retrieved from https://www.climate.gov/news-features/climate-and/climate-construction

Fretty, P. (2006) Project Management 2.0, PM Network, 20(7), 38-44.

Gale, A., Brown, M. (2003). Project management professional development. Journal of Management Development, 22(5), 410-425. doi:org/10.1108/02621710310474769

Gale, S. (2018) Damage prevention. PMI Network, 32(2), 30-36.

Galvin, T., Gibbs, M., Sullivan, J., & Williams, C. (2014). Leadership competencies of project managers: An empirical study of emotional, intellectual, and managerial dimensions. Journal of Economic Development, Management, IT, Finance & Marketing, 6(1), 35-60.

Gardner, L., Stough, C. (2002). Examining the relationship between leadership and emotional intelligence in senior level managers. Leadership & Organization Development Journal, 23(2), 68-78, doi:10.1108/01437730210419198.

GCI announces state's first wireless 5G network in Anchorage. (2019, June 18). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/06/18/gci-announces-states-first-wireless-5g-network-in-anchorage/

Gehring, D. R. (2007). Applying traits theory of leadership to project management. Project Management Journal, 38(1), 44-54.

Geoghagen, L., Dulewicz, V. (2008). Do project managers' leadership competencies contribute to project success? Project Management Journal, 39(4), 58-67. doi:10.1002/pmj.20084.

George, J. (2000). Emotions and leadership: The role of emotional intelligence. Human Relations, 53(8), 1027-1055, doi:0018-7267(200008)53:8.

George, B. (2003). Taking charge: Vision and heart. Chief Executive, (194), 30-32.

George, B. (2005). Authentic Leaders: Leadership Excellence Essentials, 22(10), 3–4.

George, B., Sims, P. (2007a). True North: Discover your authentic leadership. San Francisco, CA: Jossey-Boss.

George, B., Sims, P., McLean, A., Mayer, D. (2007b). Discovering your authentic leadership. Harvard Business Review, 85(2), 129-138

George, R.T. (2006). Business ethics, Sixth edition. Upper Saddle River, NJ: Pearson Prentice Hall.

Gluch, P., Raisanen, C. (2012). What tensions obstruct an alignment between project and environmental management practices? Engineering, Construction and Architectural Management, 19(2), 127-140. doi.10.1108/09699981211206070.

Goetsch, D. (1993). Industrial safety and health in the age of high technology: For technologist, engineers, and managers. New York, NY: Macmillan Publishing Company.

Goffee, R., Jones, G. (2009). Authentic leadership. Leadership Excellence Essentials, 26(7), 17.

Goleman, D. (1995). Emotional intelligence: Why it can matter more than IQ? New York, NY: Bloomsbury Publishing.

Goleman, D. (1998a). What makes a leader? Harvard Business Review, 76(6), 92-93.

Goleman, D. (1998b). The emotional intelligence of leaders. Leader to Leader, 1998(10), 20-26. doi:10.1002/ltl.40619981008.

Goleman, D. (2006). Social intelligence: The new science of human relationships. New York, NY: Bantam Dell Publishing.

Goleman, D. (2014). What it takes to achieve managerial success. Talent Development, 68(11), 48-53.

Goleman, D. (2018). Daniel Goleman: What makes a leader? Business & Leadership. Retrieved from https://www.businessandleadership.com/leadership/item/33518-what-makes-a-leader/.

Goleman, D., Boyatzis, R., Mckee, A. (2002). Primal leadership: Learning to lead with emotional intelligence. Boston, MA: Harvard Business School Press.

Griffith-Cooper, B., King, K. (2007). The Partnership between project management and organizational change: Integrating change management with change leadership. Performance Improvement, 46(1), 14-20.

Hackett, R., Wang, G. (2012). Virtues and leadership: An integrating conceptual framework founded in Aristotelian and Confucian perspectives on virtues. Management Decision, 50(5), 868-899, doi:10.1108/00251741211227564.

Haji-Kazemi, S., Andersen, B. (2013). Application of performance measurements as an early warning system: A case study in the oil and gas industry. International Journal of Managing Projects in Business, 6(4), 714-738.

Hardy-Vallee, B. (February 2012). The cost of bad project management. Retrieved from http://news.gallup.com/businessjournal/152429/Cost-Bad-Project-Management.aspx

Hassan, M., Bashir, S., Abbas, S.M. (2017). The impact of project managers' personality on project success in NGOs: The mediating role of transformational leadership. Project Management Journal, 48(2), 74-87.

Hebert, B. (2002). Tracking progress. CMA Management, 75(10), 24-27.

Hillman, A., Keim, G. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? Strategic Management Journal, 22(2), 125-139.

Hindle, T. (July 2008). Warren Bennis. Economist Intelligence Unit, Retrieved from https://www.economist.com/news/2008/07/25/warren-bennis

Holt, A.S.J. (2008). Principles of construction safety. Malden, MA: Blackwell Publishing.

Homeless of homesteading: Can Anchorage solve its illegal camping problem in city parks. (2019, May 22). KTUU News. Retrieved from https://www.ktuu.com/content/news/Homeless-or-Homesteading-Can-Anchorage-solves-its-illegal-camping-problem-in-city-parks-483416601.html

Hoole, C., Du Plessis, Y. (2002). The development of a project management culture assessment framework. Paper presented at PMI Research Conference: Frontiers of project management research and applications, Seattle, WA. 2002. Newtown Square, PA: Project Management Institute.

Hossenlopp, R., Udo, N. (2004). Viewing projects strategically: Key choices in product development. Paper presented at PMI Global Congress, Anaheim, CA. 2004. Newtown Square, PA: Project Management Institute.

Hudson, H.E. (2015). Connecting Alaskans: Telecommunications in Alaska from telegraph to broadband. Fairbanks, AK: University of Alaska Press.

Huemer, L. (2004). Activating trust: The redefinition of roles and relationships in an international construction project. International Marketing Review, 21(2), 187-201.

Hughes, S. W., Tippett, D. D., Thomas, W. K. (2004). Measuring project success in the construction industry. Engineering Management Journal, 16(3), 31-37. doi.org/10.1080/10429247.2004.11415255

Huse, M., Eide, D. (1996). Stakeholder management and the avoidance of corporate control. Business and Society, 35(2), 211-244.

Hutka, T. (2009). 21 Tips for successful Capital Projects. Public Management Journal, 91(5), 14-18.

Ingason, H. T., Jonasson, H. I. (2009). Contemporary knowledge and skill requirements in project management. Project Management Journal, 40(2), 59-69. 10.1002/pmj.20122

Ingram, J., Cangemi, J. (2012). Emotions, emotional intelligence and leadership: A brief, pragmatic perspective. Education, 132(4), 771-778.

Ireland, I. (2010). The role of transformational leadership and emotional intelligence. Australian Journal of Civil Engineering, 5(1), 7-18.

Irwin, B. (2007). Politics, leadership, and the art of relating to your project team. Paper presented at PMI Global Congress, Atlanta, GA. 2007. Newtown Square, PA: Project Management Institute.

Ivancevich, J. (1979). An analysis of participation in decision making among project engineers. Academy of Management Journal, 22(2), 253-269.

Jackson, E. (May 2014). Sun Tzu's 31 best pieces of leadership advice. Retrieved from https://www.forbes.com/sites/ericjackson/2014/05/23/sun-tzus-33-best-pieces-of-leadership-advice/#4d89062a5e5e

Jagerbrand, A., Sjobergh, J. (2016). Effects of weather conditions, light conditions, and road lighting on vehicle speed. SpringerPlus, 5(505), 2-17, doi:10.1186/s40064-016-2124-6.

Jasniecki, R. (2014). Stressing safety. PM Network, 28(7), 70-71.

Jha, K., Iyer, K.C. (2006). Critical factors affecting quality performance in construction projects. Total Quality Management and Business Excellence, 17(9), 1155-1170. doi:10.1080/14783360600750444

Jogulu, U., Pansiri, J. (2011). Mixed methods: A research design for management doctoral dissertations. Management Research Review, 34(6), 687-701, doi:10.1108/01409171111136211.

Johnson, L. (1999). Emotional intelligence. Executive Excellence, August 10, 10-11.

Johnson, M.A. (2015). From SOS to WOW! Tips for project management success. Paper presented at PMI Global Congress, Orlando, FL. 2015. Newtown Square, PA: Project Management Institute.

Jones, T. (2017a). Frozen assets: A diamond mine project team had to navigate subarctic territory to strike it rich. PM Network, 31(12), 62-67.

Jones, T. (2017b). Built for speed: Agile is helping organizations transform the customer experience and fend off startup disrupters. PM Network, 31(9), 48-53.

Joslin, R., Müller, R. (2016). The impact of project methodologies on project success in different project environments. International Journal of Managing Projects in Business, 9(2), 364-388.

Kangas, P. (2016). Stakeholder management 101. Quality Progress, 49(1), 15.

Kawalek, P. (2007). The bubble strategy. The International Journal of Public Sector Management, 20(3), 178-191. doi:10.1108/09513550710740599.

Kenai Peninsula Borough (2019). GIS Map. Retrieved from https://gis.kpb.us/map/index.html?viewer=basic

Kenai river fishing is slow now but runs should come in soon. (2019, July 19). KTUU News. Retrieved from https://www.ktuu.com/content/news/Kenai-River-fishing-is-slow-now-but-runs-should-come-in-soon-512929901.html

Kenny, J. (2003). Effective project management for strategic innovation and change in an organizational context. Project Management Journal, 34(1), 43-55.

Kerr, R., Garvin, J., Heaton, N., Boyle, E. (2005). Emotional intelligence and leadership effectiveness. Leadership & Organization Development Journal, 27(4), 265-279. doi:10.11008/01437730610666028.

Khattak, M. S., Mustafa, U., Shah, S. M. S. (2016). Mapping project management competencies with different complexities for improving performance. Journal of Managerial Sciences, 10(2), 205-217.

King, M.L. (1960). Keep Moving from This Mountain: Address at Spelman College on 10 April 1960, Atlanta, GA. Retrieved from http://okra.stanford.edu/transcription/document_images/Vol05Scans/10Apr1960KeepMovingfromThisMountain, AddressatSpelmanCollege.pdf

Klein, R. (2009). A review of becoming a resonant leader (McKee, Boyatzis, and Johnston): contextualizing the place of emotional intelligence skills with respect to team leadership and group dynamics. Organizational Management Journal, 6(1), 58-63.

Klouda, N. (2015). The Alaska economy. Alaska Business Monthly, 31(1), 38-46.

Koehn, E., Brown, G. (1985). Climatic effects on construction. Journal of Construction Engineering and Management, 111(2), 129-137.

Kouzes, J., Posner, B. (2002). The leadership challenge. San Francisco, CA: Jossey-Bass.

Krog, C., Govender, K. (2015). Servant leadership and project management: Examining the effects of leadership style on project success. Paper presented at the 11th European Conference on Management, Leadership & Governance, Lisbon, Portugal. 2015. Academic Conferences and Publishing Limited. 201-210.

Kruse, K. (April 2013). What is leadership? Retrieved from http://www.forbes.com/sites/kevinkruse/2013/04/09/what-is-leadership/

Landry, M. (2013). Navigating the political minefield. PM Network, 27(3), 38-43.

Langhorn, S. (2004). How emotional intelligence can improve management performance. International Journal of Contemporary Hospitality Management, 16(4/5), 220-231.

Leaving Alaska: Thousands migrate for a strong Lower 48 economy. (2019, August 14). KTUU News. Retrieved from https://www.ktuu.com/content/news/Leaving-Alaska-Thousands-emigrate-for-a-strong-Lower-48-economy-543466731.html

Lencioni, P. (2002). The five dysfunctions of a team: A leadership fable. San Francisco, CA: Jossey-Bass.

Levin, G., Rad, P.F. (2007). Moving forward with project management: a knowledge management methodology. Paper presented at PMI Global Congress, Atlanta, GA. 2007. Newtown Square, PA: Project Management Institute.

Leybourne, S. A. (2009). Improvisation and agile project management: A comparative consideration. International Journal of Managing Projects in Business, 2(4), 519-535.

Li, Z., Gupta, B., Loon, M., Casimir, G. (2016). Combinative aspects of leadership style and emotional intelligence. Leadership & Organization Development Journal, 37(1), 107-125, doi:10.1108/LODJ-04-2014-0082.

Linn, M. (2008). Organizational culture: an important factor to consider. Bottom Line Managing Library Finances, 21(3), 88-93. doi:10.1108/08880450810912844.

Little, B. (2011). The principles of successful project management. Human Resource Management International Digest, 19(7), 36-39.

Liu, A., Fellows, R., Fang, Z. (2003). The power paradigm of project leadership. Construction Management & Economics, 21(8), 819-829.

Liu, A. M. M., Fang, Z. (2006). A power-based leadership approach to project management. Construction Management & Economics, 24(5), 497-507. doi:10.1080/01446190600567944.

Loch, C., Mohring, M., Sommer, S. (2017). Supervising projects you don't (fully) understand: Lessons for effective project governance by steering committees. California Management Review, 59(2), 45-67. 10.1177/0008125617697944.

Logic Geophysics Analytics (2019). Applications. Retrieved from https://www.logicgeophysics.com

Longman, A., Mullins, J. (2004). Project management: Key tool for implementing strategy. The Journal of Business Strategy, 25(5), 54-60.

Loo, R. (2003). A multi-level causal model for best practices in project management. Benchmarking, 10(1), 29-37, doi:10.1108/14635770310457520.

Lymore, K. (2002). Project managers as leaders: Self-assessment can be painful, but well worth the journey. Project Management and Leadership, 2002-May-June, 70-72.

Maamari, B., Majdalani, J. (2016). Emotional intelligence, leadership style and organizational climate. International Journal of Organizational Analysis, 25(2), 327-345, doi:10.1108/IJOA-04-2016-1010.

Malach-Pines, A., Divr, D., Sadeh, A., (2009). Project manager-project (PM-P) fit and project success. International Journal of Operations & Production Management, 29(3), 268-291. doi10.1108/01443570910938998

Maqbool, R., Sudong, Y., Manzoor, N., Rashid, Y. (2017). The impact of emotional intelligence, project manager's competencies, and transformational leadership on project success: An empirical perspective. Project Management Journal, 48(3), 58-75.

Marks, L. (2016). What is project management? Manager, Q1, 24-25.

Masarech, M. (2001). Authentic leadership: A challenge and a process. Employment Relations Today, 28(3), 79-84.

Matthews, J., Herbert, D. (2008). Geography: A very short introduction. Oxford, England: Oxford University Press.

Mathur, G., Jugdev, K., Fung, T.S. (2013). Project management assets and project management performance outcomes: Exploratory factor analysis. Management Research Review, 36(2), 112-135. doi:10.1108/01409171311292234.

Maxwell, J. (2007). Leadership. Retrieved from http://www.christianitytoday.com/pastors/2007/july-online-only/090905.html

McKinney, K. (1993). Everyday geography, First edition. Garden City, NY: Guild America Books.

Meding. J., Wong, J., Kanjanabootra, S., Tfti, M.T. (2016). Competence-based system development for post-disaster project management. Disaster Prevention and Management, 25(3), 375-394, doi:10.1108/DPM-07-2015-0164.

Merriam-Webster. (2018). Definition of Planning. Retrieved from https://www.merriam-webster.com/dictionary/planning

Metcalf, M. (2014). Building authentic leadership by innovating how you lead. Integral Leadership Review, 14(3), 105–112.

Mills, G.E., Gay, L.R. (2016). Educational research: Competencies for analysis and Applications, Eleventh edition. Boston, MA: Pearson Publishing.

Mole, C., Paulin, M., Sturge, A. (2013) Best practice in arctic development concept selection – How to avoid the traps. Paper presented at the 10th International Symposium on Cold Regions Development. Anchorage, AK. 2013. Reston, VA: American Society of Civil Engineers.

Moose hunter attacked by a bear, the animal was shot & killed. (2019, September 9). KTUU News. Retrieved from https://www.ktuu.com/content/news/Moose-hunter-attacked-by-a-bear-the-animal-was-shot-killed-559846601.html

Morris, P. (2010). Research and the future of project management. International Journal of Managing Projects in Business, 3(1), 139-146.

Morrison, J.M., Brown, C.J, Smit, E.M. (2008). The impact of organizational culture on project management in matrix organizations. South African Journal of Business Management, 39(4), 27-38.

Moselhi, O., El-Rayes, K. (2002). Analyzing weather-related construction claims. Cost Engineering, 44(8), 12-20.

Moylan, W., Walker, L. (2012). Ethics in project management: Research on values-based leadership in project driven arenas. PM World Journal, 1(3), 1-29.

MTA officials say new high-speed internet project will expand connectivity, increase internet speeds across Alaska. (2019, May 1). KTUU News. Retrieved from https://www.ktuu.com/content/news/Officials-New-terrestial-fiber-line-to-expand-connectivity-increase-internet-speeds-509323521.html

Muller, R., Turner, J. (2010). Attitudes and leadership competencies for project success. Baltic Journal of Management, 5(3), 307-329, doi:10.1108/17465261011079730.

Naoum, S. (2016). Factors influencing labor productivity on construction sites: A state-of-the-art literature review and a survey. International Journal of Productivity and Performance Management, 65(3), 401-421. doi:10.1108/IJPPM-03-2015-0045.

Naske, C., Slotnick, H. (1987). Alaska: A history of the 49th state, Second edition. Norman, OK: University of Oklahoma Press.

National Aeronautics Space Association [NASA]. (2019). Alaska's thawing permafrost. Retrieved 2019 from https://landsat.gsfc.nasa.gov/pdf_archive/cape_halkett_4 web.pdf

National Geographic. (2017). What is geography? Retrieved from https://www.nationalgeographic.org/education/what-is-geography/

National Geographic (2018). Ring-of-Fire. Retrieved from https://www.nationalgeographic.org/encyclopedia/ring-fire/

National Oceanic and Atmospheric Administration. (2017). About our agency? Retrieved from http://www.noaa.gov/about-our-agency

National Oceanic and Atmospheric Administration. (2018). Tides. Retrieved from https://oceanservice.noaa.gov/education/kits/tides/tides04_angle.html

National Park Service. (2019). Permafrost. Retrieved from https://www.nps.gov/subjects/aknatureandscience/permafrost.htm

Nayak, A. (2016). Wisdom and the tragic question: Moral learning and emotional perception in leadership and organizations. Journal of Business Ethics, 137,1-13. doi:10.1007/s10551-01502540-5.

New state pumpkin record. (2019, August 27). KTUU News. Retrieved from https://www.ktuu.com/content/news/New-pumpkin-state-record-558489281.html

Newton, S. (2009). New Directions in Leadership. Construction Innovation, 9(2), 129-132.

Ng, C., Walker, D. (2008). A study of project management leadership styles across life cycle stages of an IT project in Hong Kong. International Journal of Managing Projects in Business, 1(3), 404-427, doi:10.1108/17538370810883846.

Nidiffer, K., Dolan, D. (2005). Evolving distributed project management. IEEE Software, 22(1), 63-74.

Norrie, J., Walker, D. H. T. (2004). A balanced scorecard approach to project management leadership. Project Management Journal, 35(4), 47-56.

Northouse, P. (2016). Leadership: Theory and practice. 7th Edition, Los Angeles, CA. Sage Publications.

Noval, L. (2009). When the triangle (budget-time-performance) becomes a rectangle with a fourth dimension (safety). Paper presented at PMI Global Congress EMEA, Amsterdam, North Holland, the Netherlands. 2009. Newtown Square, PA: Project Management Institute.

Occupational Health and Safety Administration. (2018a). OSHA law and regulations. Retrieved from https://www.osha.gov/law-regs.html

Occupational Health and Safety Administration. (2018b). OSHA injury and recordkeeping. Retrieved from https://www.osha.gov/recordkeeping/index.html

Ong, V., Richardson, D., Duan, Y., He, Q., Johnson, B. (2009). The role of project leadership in achieving effective project management. Paper presented at 5th European Conference on Management, Leadership & Governance, Athens, Greece. 2009.

Ono, D. (1993). Professional project management: please stand up! PM Network, 7(8), 45-49.

Osborn, L. (2016). Lowest temperatures recorded in Alaska. Retrieved from https://www.currentresults.com/Weather-Extremes/US/lowest-temperatures-alaska.php

Oxford Dictionary. (2018). What is geography? Retrieved from https://www.lexico.com/en/definition/geography

Oyegoke, A. (2011). The constructive research approach in project management research. International Journal of Managing Projects in Business, 4(4), 573-595, doi:10.1108/17538371111164029.

Oyewole, A.O. (2004). Whoever said process implementation is a hassle? Paper presented at PMI Global Congress, Anaheim, CA. 2004. Newtown Square, PA: Project Management Institute.

Özkan, S., Ceylan, A. (2012). Multi-Level analysis of authentic leadership from a Turkish construction engineer's perspective. South East European Journal of Economics & Business (1840118X), 7(2), 101–114.

Packendorff, J. (1995). Inquiring into the temporary organization: New directions for project management research. Scandinavian Journal of Management, 11(4), 319-333.

Page, S. (2010). The power of business process improvement: 10 simple steps to increase effectiveness, efficiency, and adaptability. New York, NY: American Management Association.

Pasian, B. (2017). Thoughts on climate change and project management. Project Management Research and Practice, 4, 5462. doi:org/10.5130/pmrp.v4i0.5462.

Perrin, R., Barrows, C. (2008). Real world project management: Beyond conventional wisdom, best practices and project methodologies. Hoboken, NJ: John Wiley & Sons.

Petrides, K.V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire. In C. Stough, D.H. Saklofske, and J.D. Parker. Advances in the assessment of emotional intelligence. (pp. 85-101. New York, NY: Springer. doi:10.1007/978-0-387-88370-0_5

Petrov, A., Cavin, P. (2013). Creative Alaska: Creative capital and economic development opportunities in Alaska. Polar Record, 49(251), 348-361, doi:10.1017/S0032247412000289.

Pidwirny, M. (2006). Introduction to geography. Fundamentals of physical geography, 2nd Edition. Retrieved from http://www.physicalgeography.net/fundamentals/1a.html

Pinto, J.K. (2000). Understanding the role of politics in successful project management. International Journal of Project Management, 18(2), 85-91, doi:10.1016/S0263-7863(98)00073-8.

Port of AK to cost almost $2 billion to repair and replace. (2019, January 28). KTUU News. Retrieved from https://www.ktuu.com/content/news/Port-of-Alaska-expected-to-cost-almost-2-billion-to-repair-and-replace-504997701.html

Prabhakar, G.P. (2008). Projects and their management: A literature review. International Journal of Business and Management, 3(8), 3-9. doi:http://dx.doi.org/10.5539/ijbm.v3n8p3

Preston, G., Moon, J., Simon, R., Allen, S., Kossi, E. (2015). The Relevance of emotional intelligence in project leadership. Journal of IT and Economic Development, 6(1), 16-40.

Project Management Institute. (2017a). A guide to the project management body of Knowledge, Sixth edition. Newtown Square, PA: Project Management Institute

Project Management Institute. (2017b). Agile Guide. Newtown Square, PA: Project Management Institute

Project Management Institute. (2017c). About us. Retrieved from https://www.pmi.org/about

Project Management Institute. (2017d). Project management professional. Retrieved from https://www.pmi.org/certifications/types/project-management-pmp

Pryke, S., Lunic, D., Badi, S. (2015). The effect of leader emotional intelligence on leader-follower chemistry: A study of construction project managers. Construction Management and Economics, 33(8), 603-624, doi:10.1080/01446193.2015.1078901

Psychometric Labs. (2017). Trait emotional intelligence framework. Retrieved from http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

Quinn, R., Thakor, A. (2018). Creating a purpose-driven organization. Retrieved from https://hbr.org/2018/07/creating-a-purpose-driven-organization

Rajvanshi, K. (2010). Local flavor. PM Network, 24(3), 21.

Rapp, R. (2004). Grooming project managers for company leadership. Cost Engineering, 46(5), 16-19.

Rausch, E. (2003). Guidelines for management and leader decision. Management Decision, 41(10), 979-989.

Ravn Air and UAA launch first paid pilot training program. (2019, April 18). KTUU News. Retrieved from https://www.ktuu.com/content/news/Ravn-Air-and-UAA-launch-first-paid-pilot-training-program-508779741.htm

Reed, D. (2015). Stakeholder management theory: A critical theory perspective. Business Ethics Quarterly, 9(3), 453-483, doi:10.2307/3857512.

Ritter, H. (1993). Alaska's history: The people, land, and events of the north country. Portland, OR: Alaska Northwest Books.

Robinson, A. (2016). The right direction. PM Network, 30(3), 25.

Rock slides, 2, in 2 days – one resulting in serious injury – highlight risks of Seward highway. (2019, January 27). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/anchorage/2019/01/28/rocks-fall-unpredictably-2-rock-slides-in-2-days-1-resulting-in-serious-injury-highlight-risks-of-seward-highway/

Rocks continue falling on Seward highway near Anchorage after earthquake. (2018, December 8). Anchorage Daily News. Retrieved from https://www.adn.com/alaska-news/2018/12/08/chunk-of-seward-highway-near-anchorage-remains-particularly-dangerous-after-quake-dot-says

Rockwood, K. (2017). No time to lose: How project professionals can raise their leadership game. PM Network, 31(6), 36-38.

Rolstadas, A., Tommelein, I., Schiefloe, P.M., Ballard, G. (2014). Understanding project success through analysis of project management approach. International Journal of Managing Projects in Business, 7(4), 638-660, doi:10.1108/IJMPB-09-2013-

Ross, C. (2018). Opportunities to improve safety at every level. Associated General Contractors of Alaska. Retrieved from http://ebooks.aqppublishing.com/archive/business/archived/AGC/AGC%20Contractor_Winter%202018.pdf

Rowlinson, S., Cheung, Y. (2008). Stakeholder management through empowerment: Modeling project success. Construction Management and Economics, 26, 611-623, doi:10.1080/01446190802071182.

Salovey, P. Mayer, J.D. (1990). Emotional intelligence. Imagination, Cognition and Personality, 9(3), 185-211.

Saunders, F., Gale, A., Sherry, A. (2013). Understanding project uncertainty in safety-critical industries. Paper presented at the PMI Global Congress, Istanbul, Turkey. 2013. Newtown Square, PA: Project Management Institute. 0048.

Schein, E. (1984). Coming to a new awareness of organizational culture. Sloan Management Review, 25(2), 3-17.

Schein, E. (1986). What you need to know about organizational culture. Training and Development Journal, Jan-86, 30-33.

Schein, E. (1990). Organizational culture. American Psychologist, 45(2), 109-119.

Schein (2004). Organizational culture and leadership, Third edition. Hoboken, NJ: John Wiley & Sons.

Schein (2009). The corporate culture survival guide. Hoboken, NJ: John Wiley & Sons.

Schiff, J. L. (2017, August). 7 must-have project management skills. CIO, 13284045, 15-19. Retrieved from https://www.cio.com/article/2389129/project-management-7-must-have-project-management-skills-for-it-pros.html

Schultz, J. (2013). The elements of leadership. Global Business and Organizational Excellence, 2013-Sept-Oct, doi:10.1002/joe.21514.

Schwartz, J., Gaito, P., Lennick, D. (2011). That's the way we (used to) do this around here. Strategy & Leadership, 62(1), 2-18.

Sea-ice loss at the top of the world just the tip of the iceberg. (2019, August 25). KTUU News. Retrieved from https://www.ktuu.com/content/news/Sea-ice-loss-at-the-top-of-the-world-just-the-tip-of-the-iceberg-researcher-says-558254521.html

Sears, S., Sears, G., Clough, R., Rounds, J., Segner, R. (2015). Construction project: A practical guide to field construction management, 6th edition. Hoboken, NJ. John Wiley & Sons,

Sechelariu, M. (2012). Emotional intelligence and leadership. Journal of Criminal Investigations, 12(1), 183-190.

Severe cold temperature snap to hit Fairbanks and interior Alaska. (2012, January 12). KTUU News. Retrieved from https://www.ktuu.com/content/news/Severe-cold-temperature-snap-to-hit-Fairbanks-and-interior-Alaska-410533715.html

Shenhar, A.J. (2004), Strategic project leadership: Toward a strategic approach to project management. R&D Management, 34(5), 569-580.

Shenhar, A.J., Dvir, D. (2007). Reinventing project management: The diamond approach to successful growth & innovation. Boston, MA: Harvard Business School Press

Simmons, L. (1996), Organizational culture. Mortgage Banking, 56(9), 105-106.

Skeen, G. (2012). Are you reaping the benefits of employing risk management practices? South African Institution of Civil Engineering Magazine, 20(6), 23-28.

Slevin, D. (1985). Executive survival manual: A program for managerial effectiveness. Pittsburgh, PA: Innodyne, Inc.

Slevin, D. (1997). Leadership, Motivation, and the Project Manager. Retrieved from https://doi.org/10.1002/9780470172353.ch29:

Slevin, D., Pinto, J. (1991). Project leadership: Understanding and consciously choosing your style. Project Management Journal, 22(1), 39-45.

Smits, K. (2017). An invisible constraint: Don't overlook the power of organizational Culture. Here's how to nurture a positive environment. PM Network, 31(5), 24-25.

Soderlund, J. (2004). Building theories of project management: Past research, questions for the future. International Journal of Project Management, 22(4), 183-191, doi:10.1016/S0263-7863(03)00070-X.

Song, Y., Le, Y., Wang, Y. (2017). The impact of organizational culture on organizational effectiveness in construction projects. Applied Mechanics and Materials, 858(1), 325-331. doi:10.4028/www.scientific.net/AMM.858.325

Spender, J.C. (1989). An enquiry into the nature and sources of management judgment. Cambridge, MA: Basil Blackwell Limited.

Strohmeyer, J. (1997). Extreme conditions: Big oil and the transformation of Alaska. Anchorage, AK: Cascade Press.

Studer, Q. (2009). Straight A leadership: Alignment, action, accountability. Gulf Breeze, FL: Fire Starter Publishing.

Sturiale, A., Chicca, L., Gerosa, S. (2017). Don't gamble with uncertainty: A monte carlo analysis helps project teams go beyond risk management. PM Network, 31(10), 30-31.

Sumner, R. (2004). Geography basics. Pasadena, CA: Salem Publishing.

Sunindijo, R., Hadikusumo, B., Ogunlana, S. (2007). Emotional intelligence and leadership styles in construction project management. Journal of Management in Engineering, 23(4), 166-170, doi:10.1061/(ASCE)0742-597X(2007)23:4(166).

Sutterfifeld, J., Friday-Stroud, S., Shivers-Blackwell, S. (2006). A case study of project and stakeholder management failures: Lessons learned. Project Management Journal, 37(5), 26-35.

Sy, T., Cote, S. (2004). Emotional intelligence: A key ability to succeed in the matrix organization. The Journal of Management Development, 23(5/6), 437-456.

Tabassi, A., Roufechaei, K., Bakar, A., Yusof, N. (2017). Linking team condition and team performance: A transformational leadership approach. Project Management Journal, 48(2), 22-38.

Tamkin, P. (2012). Leadership by design. Strategic HR Review, 11(2), 90-95, doi:10.1108/14754391211202152.

Tansey, S., Jackson, N. (2014). Politics: The basics, 5th Edition. London, England: Routledge Publishers. doi.org/10.4324/9781315754734

Thamhain, H. (2013). Managing risks in complex projects. Project Management Journal, 44(2), 20-35, doi:10.1002/pmj.21325.

Thomas, P., Pinto, J. K. (1999). Project leadership: A question of timing. Project Management Journal, 30(1), 19.

Toor, S., Arain, F. (2012). The quadrilateral model of leadership: Findings from a study on a mega project. International Journal of Construction Project Management, 4(2), 125-146.

Toor, S., Ofori, G. (2009). Ethical leadership: Examining the relationships with full range leadership model, employee outcomes, and organizational culture. Journal of Business Ethics, (90), 533-547. doi:10.1007/s10551-009-0059-3.

Toor, T. (2009). People management: An imperative to effective project management. Business Strategy Series, 10(1), 40-54. doi:10.1108/17515630910937788.

Trejo, A. (2014). Emotional intelligence and project outcomes. International Management Review, 10(1), 31-66.

Trejo, A. (2016). Project outcomes improved by emotional intelligence. Business Perspectives and Research, 4(1), 67-76. Doi:10.1177/2278533715605436.

Turk, W. (2006). The five P's in project management. Defense AT&L, 35(4), 22-23.

Turk, W. (2008). Project Management Top 20. Defense AT&L, 37(1), 35-36.

Unit 13 opened to any caribou for permit-holders. (2019, July 31). KTUU News. Retrieved from https://www.ktuu.com/content/news/Unit-13-opened-to-any-caribou-513462411.html

University of Alaska (2018a). Alaska 1964 earthquake. Retrieved 2018 from https://earthquake.alaska.edu/earthquakes/notable/1964-m92-great-alaskan-earthquake

University of Alaska (2018b). Alaska earthquake center. Retrieved from https://earthquake.alaska.edu/earthquakes/about

US Census Bureau. (2017a). Quick-Facts, US population. Retrieved from https://www.census.gov/quickfacts/fact/table/US/POP060210

US Census Bureau. (2017b). Quick-Facts, AK businesses. Retrieved from https://www.census.gov/quickfacts/fact/map/US/BZA010216

US Geological Survey. (2018). 2018 Anchorage earthquake. Retrieved from https://www.usgs.gov/news/2018-anchorage-earthquake

US House approves anti-Pebble amendment; Young votes no, defends permit process. (2019, June 19). Alaska Public News. Retrieved from https://www.alaskapublic.org /2019/06/19/us-house-approves-anti-pebble-amendment-young-votes-no-defending-permit process/

Verma, A. (September 2013). Social & Political influences on project management. Retrieved from https://www.whizlabs.com/blog/social-political-influences-on-project-management/

Vidal, L, Marle, F. (2008). Understanding project complexity: Implications on project management. Kybernetes, 37(8), 1094-1110, doi.org/10.1108/03684920810884928.

Walker, L., Moylan, W. (2014). Ethics in project management research on values-based leadership in project driven arenas. Organization, Technology and Management in Construction, 6(3), 1115-1121, doi:10.5592/otmcj.2014.3.6.

Walumbwa, F., Avolio, B., Gardner, W., Wernsing, T., Peterson, S. (2008). Authentic leadership: Development and validation of a theory-based measure(dagger). Journal of Management, 34(1), 89-126.

Ward, S. (2017). Leadership definition: What is leadership? And can you learn to become a good leader? Retrieved from https://www.thebalance.com/ leadership-definition-2948275

Weather alerts: Expect snow in Anchorage on Friday and Saturday. (2017, January 13). KTUU News. Retrieved from https://www.ktuu.com/content/news/Weather-Alerts-snow-in-Anchorage-on-Friday-and-Saturday-410693205.html

Weisenberger, M., Teufel, B. (2011). Organizational politics in new product development project selection. European Journal of Innovation Management, 14(1), 51-73. doi:10.1108/14601061111104698.

Whetten, D., Cameron, K. (2015). Developing management skills, global edition, Ninth edition. Boston, MA: Pearson Publishing

Wiewiora, A., Murphy, G., Trigunarsyah, B., Brown, K. (2014). Interactions between organizational culture, trustworthiness, and mechanisms for inter-project knowledge sharing. Project Management Journal, 45(2), 48-65. doi:10.1002/pmj.21407.

With sea ice still melting, vessels doing Arctic transits stop at Nome late in season. (2019, September 10). Anchorage Daily News. Retrieved from https://www.adn.com/business-economy/2019/09/10/with-sea-ice-still-melting-vessels-doing-arctic-transits-stop-at-nome-late-in-season/

Woodford, R. (2016) Hazing brown bears at Port Armstrong, Alaska Department of Fish & Game, February 2016, Retrieved from http://www.adfg.alaska.gov /index.cfm?adfg=wildlifenews.view_article&articles_id=760

World Eskimo Indian Olympics underway in Fairbnks. (2019, July 17). KTUU News. Retrieved from https://www.ktuu.com/content/news/World-Eskimo-Indian-Olympics-begins-Fairbanks-512875111.html

Wren, J.T. (1995). The Leader's companion: Insights on leadership through the ages. New York, NY: Free Press Publishers.

Yang, J., Shen, G., Drew, D., Ho, M. (2010). Critical success factors for stakeholder management: Construction practitioners' perspectives. Journal of Construction Engineering and Management, 136(7), 778-786.

Yang, J., Shen, G., Ho, M., Drew, D., Chan, A. (2009). Exploring critical success factors for stakeholder management in construction projects: Journal of Civil Engineering and Management, 15(4), 337-348. doi:10.3846/1392-3730.2009.15.337-348.

Yazici, H.J. (2009). The role of project management maturity and organizational culture in perceived performance. Project Management Journal, 40(3), 14-33, doi:10.1002/pmj.20121.

Yeasmin, S., Rahman, K.F. (2012). Triangulation research methods as the tool of social science research. BUP Journal, 1(1), 154-163.

Zhang, L., Fan, W. (2013). Improving performance of construction projects. Engineering, Construction and Architectural Management, 20(2), 195-207. Doi:10.1108/09699981311303044.

Ziek, P., Anderson, J.D. (2015). Communication, dialogue and project management. International Journal of Managing Projects in Business, 8(4), 788-803. doi:10.1108/IJMPB-04-2014-0034.

Zimmer, B. (1999). Project management: Break through or bust. Hospital Management Quarterly, 21(1), 93-100.

Zimmerer, T. W., Yasin, M. M. (1998). A leadership profile of American project managers. Project Management Journal, 29(1), 31.

Appendix A

Emotional Intelligence Components

Well-being: High scores on this factor reflect a generalized sense of well-being, extending from past achievements to future expectations. Overall, individuals with high scores feel positive, happy, and fulfilled. In contrast, individuals with low scores tend to have low self-regard and to be disappointed about their life as it is at present. Your well-being score largely depends on your scores on the other three factors of the TEIQue. Elements of well-being include optimism, happiness, and self-esteem.

Self-control: High scorers have a healthy degree of control over their urges and desires. In addition to fending off impulses, they are good at regulating external pressures and stress. They are neither repressed nor overly expressive. In contrast, low scorers are prone to impulsive behavior and seem to be incapable of managing stress. Low self-control is associated with inflexibility. Elements of self-control include emotional regulation, impulsiveness, and stress management.

Emotionality: Individuals with high scores on this factor believe they have a wide range of emotion-related skills. They can perceive and express emotions and use these abilities to develop and sustain close relationships with important others. Individuals with low scores on this factor find it difficult to recognize their internal emotional states and to express their feelings to others, which often leads to less rewarding personal relationships. Elements of emotionality include empathy, relationships, emotional expression, and emotional perception.

Sociability: The sociability factor differs from the emotionality factor above in that it emphasizes social relationships and social influence. The focus is on the individual as an agent in different social contexts rather than on personal relationships with family and close friends. Individuals with high scores on the sociability factor are better at social interaction. They believe they have good listening skills and can communicate clearly and confidently with people from very diverse backgrounds. Those with lows scores believe they are unable to affect others' emotions and are less likely to be good negotiators or networkers. They are unsure what to do or say in social situations and, as a result, they often appear shy and reserved. Elements of sociability include social awareness, assertiveness, and emotion management.

Auxiliary facets include self-motivation and adaptability.

Petrides, K.V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire. In C. Stough, D.H. Saklofske, and JD Parker. Advances in the assessment of emotional intelligence. New York, NY: Springer. Doi:10.1007/978-0-387-88370-0_5. http://www.psychometriclab.com

Appendix B

Trait Emotional Intelligence Model

Version 1.50

The trait emotional intelligence (trait EI) model successfully integrates and extends EI-related ideas in a general framework that incorporates 15 specific facets.

Adaptability	Emotion control	Low impulsiveness	Self-motivation	Trait empathy
Assertiveness	Emotion expression	Relationships	Social awareness	Trait happiness
Emotion appraisal (self and others)	Emotion management (others)	Self-esteem	Stress management	Trait optimism

The TEIQue assesses all of the above facets through 15 subscales. In addition, it provides scores on four factors of broader relevance ('*well-being*,' '*self-control*,' '*emotionality*,' and '*sociability*'). Below, you will find brief information about each of the scales and factors. At all times, it is important to remember that scores on the trait EI facets do not reflect cognitive abilities (e.g., IQ), but rather self-perceived abilities and behavioural dispositions.

The TEIQue is a scientific measurement instrument based exclusively on trait EI theory. Trait EI theory is unrelated to what lay individuals understand by 'emotional intelligence' and is incompatible with all other 'models' promoted in the various literatures. The TEIQue is not an alternative to questionnaires or tests claiming to measure 'emotional intelligence'. It is

http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

specifically developed and updated to provide a gateway to trait EI theory. Trait EI theory is developed in the context of the trait emotional intelligence research program. Relevant scientific publications from the program can be downloaded at:

http://www.psychometriclab.com

Interpreting subscale scores

Emotion expression: High scores on this scale mean people are fluent in communicating their emotions to others. They know what the best words are for expressing their feelings accurately and unambiguously. Low scores on this scale indicate a difficulty in communicating emotion-related thoughts, even in situations when this is necessary. People with low scores find it difficult to let others know how they feel. Inability to express emotion may be indicative of a more generalized problem of lack of self-confidence and social assertiveness.

Empathy: This scale measures the 'perspective-taking' aspect of empathy: seeing the world from someone else's point of view. In other words, it has to do with whether one can understand other people's needs and desires. People with high scores on this scale tend to be skilful in conversations and negotiations because they take into account the viewpoints of those they are dealing with. They can put themselves "in somebody else's shoes" and appreciate how things seem to them. Low scorers have difficulty adopting other people's perspectives. They tend to be opinionated and argumentative and may often seem self-centred.

Self-motivation: People with high scores on this scale are driven by a need to produce high-quality work. They tend to be determined and persevering. They do not need to be externally

rewarded for their efforts because they have a strong sense of achievement and are motivated from within. Low scorers tend to need a lot of incentives and encouragement in order to get things done. They need constant reward to keep going and they are more likely to give up in the face of adversity. They also tend to have reduced levels of drive and persistence.

Emotion regulation: This scale measures short-, medium-, and long-term control of one's own feelings and emotional states. High scorers have control over their emotions and can change unpleasant moods or prolong pleasant moods through personal insight and effort. They are psychologically stable and they know how to pick themselves up after emotional setbacks. Low scorers are subject to emotional seizures and periods of prolonged anxiety or even depression. They find it difficult to deal with their feelings and are often moody and irritable.

Happiness: This scale concerns pleasant emotional states, primarily directed towards the present rather than the past (life satisfaction) or the future (optimism). High scorers are cheerful and feel good about themselves. Low scorers often feel blue and can be overly negative about things. More generally, people with low scores on this scale tend to be disappointed with their life as it is at present. Along with *self-esteem* and *optimism*, this scale reflects your general psychological state at present.

Social awareness: High scorers believe they have excellent social skills and are socially sensitive, adaptable, and perceptive. They are good at negotiating, brokering deals, and influencing others. In addition, they tend to have control over their emotions and the manner in which they express them, which enables them to function confidently in diverse social contexts,

http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

like parties or networking events. Low scorers believe they have limited social skills and often feel anxious in unfamiliar settings because they are unsure about how to behave. They find it difficult to express themselves clearly and have a small circle of acquaintances. They are known for their limited interpersonal skills.

Low impulsiveness: This scale measures mainly dysfunctional ('unhealthy') rather than functional ('healthy') impulsivity. Low impulsivity involves thinking before acting and reflecting carefully before making decisions. High scorers on this scale weigh all the information before they make up their mind, without, however, being overly cautious. Low scorers tend to be impetuous and to give in to their urges. Much like children, they want immediate gratification and have low self-control. They often speak without having thought things through and they change their mind frequently.

Emotion perception: This scale measures emotion perception in one's own self as well as in others. High scorers on this scale are clear about what they feel and able to decode other people's emotional expressions. In contrast, people with low scores on the emotion perception scale are often confused about how they feel and do not pay much attention to the emotional signals that others send out.

Self-esteem: The self-esteem scale measures one's overall evaluation of oneself. High scorers have a positive view of themselves and their achievements. They are confident, positive, and satisfied with most aspects of their life. Low scorers tend to lack self-respect and to not value

http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

themselves very highly. Low self-esteem scores are often the result of challenges in one or more of the other areas that the TEIQue assesses.

Assertiveness: Individuals with high scores on this scale are forthright and frank. They know how to ask for things, give and receive compliments, and confront others when necessary. They have leadership qualities and can stand up for their rights and beliefs. Low scorers tend to back-down even if they know they are right and have difficulty saying 'no,' even when they feel they must. As a result, they often end up doing things they do not want to do. In most cases, they prefer to be part of a team rather than to lead it.

Emotion management: This scale concerns one's perceived ability to manage *other* people's emotional states. High scorers on the emotion management scale can influence other people's feelings (e.g., calm them down, console them, motivate them). They know how to make others feel better when they need it. Low scorers can neither influence nor manage others' feelings. They become overwhelmed when they have to deal with other people's emotional outbursts and are less likely to enjoy socializing and networking.

Optimism: Like *happiness*, this scale is linked to well-being, albeit in a forward-looking way. High scorers look on the bright side and expect positive things to happen in their life. Low scorers are pessimistic and view things from a negative perspective. They are less likely to be able to identify and pursue new opportunities and tend to be risk-averse. Along with *happiness* and *self-esteem*, this scale reflects your general psychological state at this point in time.

http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

TEIQue Model

Relationships: This scale mainly concerns one's personal relationships, including close friends, partners, and family. It is about starting and maintaining emotional bonds with others. High scorers usually have fulfilling personal relationships that positively affect their productivity and emotional well-being. They know how to listen and be responsive to the people close to them. Low scorers find it difficult to bond well with others and tend to undervalue their personal relationships. They often behave in ways that hurt those close to them.

Adaptability: High scorers are flexible in their approach to work and life. They are willing and able to adapt to new environments and conditions – in fact, they may even enjoy novelty and regular change. Low scorers are change-resistant and find it difficult to modify their work- and life-style. They are generally inflexible and have fixed ideas and views.

Stress **management:** High scorers on this scale can handle pressure calmly and effectively because they have developed successful coping mechanisms. More often than not, they are good at regulating their emotions, which helps them tackle stress. Low scorers are less likely to have developed stress-coping strategies. They may prefer to altogether avoid situations that are potentially hectic, rather than deal with the associated tension. Their vulnerability to stress is problematic, as it leads them to reject important, but time-demanding, projects.

Interpreting factor scores

Well-being: High scores on this factor reflect a generalized sense of well-being, extending from past achievements to future expectations. Overall, individuals with high scores feel positive, happy, and fulfilled. In contrast, individuals with low scores tend to have low self-regard and to

http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

be disappointed about their life as it is at present. Your well-being score largely depends on your scores on the other three factors of the TEIQue.

Self-control: High scorers have a healthy degree of control over their urges and desires. In addition to fending off impulses, they are good at regulating external pressures and stress. They are neither repressed nor overly expressive. In contrast, low scorers are prone to impulsive behaviour and seem to be incapable of managing stress. Low self-control are associated with inflexibility.

Emotionality: Individuals with high scores on this factor believe they have a wide range of emotion-related skills. They can perceive and express emotions and use these abilities to develop and sustain close relationships with important others. Individuals with low scores on this factor find it difficult to recognize their internal emotional states and to express their feelings to others, which often leads to less rewarding personal relationships.

Sociability: The sociability factor differs from the emotionality factor above in that it emphasises social relationships and social influence. The focus is on the individual as an agent in different social contexts rather than on personal relationships with family and close friends. Individuals with high scores on the sociability factor are better at social interaction. They believe they have good listening skills and can communicate clearly and confidently with people from very diverse backgrounds. Those with low scores believe they are unable to affect others' emotions and are less likely to be good negotiators or networkers. They are unsure what to do or say in social situations and, as a result, they often appear shy and reserved.

Psychometric Labs. (2017). Trait emotional intelligence framework. Retrieved from http://www.psychometriclab.com/adminsdata/files/TEIQue%20interpretations.pdf

Appendix C

Jerrell/Slevin Management Scoring

Raw Score	D Percentile
19	1
20	1
21	1
22	3
23	5
24	6
25	9
26	12
27	15
28	22
29	27
30	37
31	42
32	53
33	64
34	72
35	81
36	85
37	91
38	94
39	97
40	98
41	99
42	99
43	100

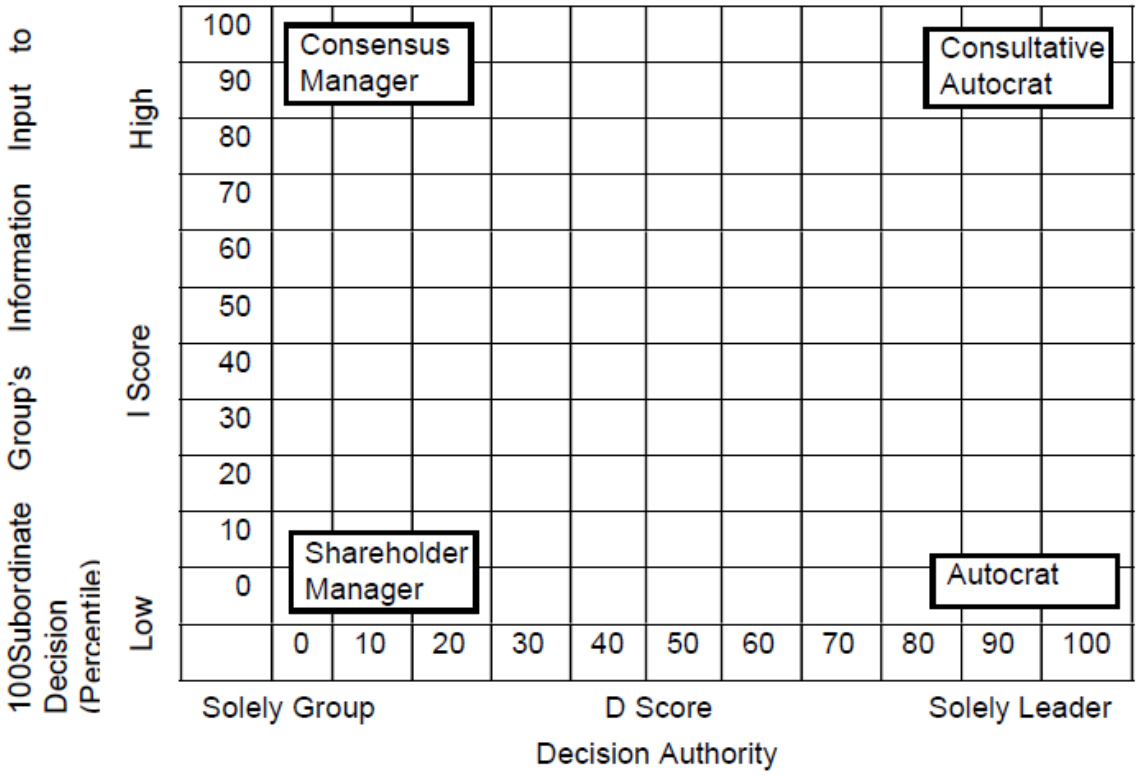
Raw Score	I Percentile
22	1
23	1
24	1
25	2
26	2
27	4
28	6
29	7
30	8
31	15
32	18
33	26
34	39
35	48
36	56
37	69
38	78
39	84
40	87
41	92
42	96
43	98
44	99
45	99
46	100

Percentiles are estimates based on data collected from 191 American managers.

Cleland, D., King, W. (1997). Project Management Handbook. New York, NY: John Wiley & Sons, Inc.

Appendix D

Management Grid



Autocrat (100, 0). Such managers solicit little or no information input from their group and make the managerial decision solely by themselves.

Consultative Autocrat (100, 100). In this managerial style intensive information input is elicited from the members, but such formal leaders keep all substantive decision-making authority to themselves.

Consensus Manager (0, 100). Purely consensual managers throw open the problem to the group for discussion (information input) and simultaneously allow or encourage the entire group to make the relevant decision.

Shareholder Manager (0, 0). This position is literally poor management. Little or no information input and exchange takes place within the group context, while the group itself is provided ultimate authority for the final decision.

Cleland, D., King, W. (1997). Project Management Handbook. New York, NY: John Wiley & Sons, Inc.

\

Appendix E

Authentic Leadership Components

Self-Awareness: To what degree is the leader aware of his or her strengths, limitations, how others see him or her and how the leader impacts others?

Transparency: To what degree does the leader reinforce a level of openness with others that provides them with an opportunity to be forthcoming with their ideas, challenges and opinions?

Ethical/Moral: To what degree does the leader set a high standard for moral and ethical conduct?

Balanced Processing: To what degree does the leader solicit sufficient opinions and viewpoints prior to making important decisions?

Avolio, B., Gardner, W., Walumbwa, F. (2007). Authentic Leadership Questionnaire Research. Menlo Park, CA. Published by Mind Garden. Retrieved from https://www.mindgarden.com/69-authentic-leadership-questionnaire#horizontalTab4

Appendix F

Survey Question 83 – Organizational Culture

Q83. Which of the following organizational cultures best describe your present organization?

- The collaborative culture functions like an extended family where information is freely shared. Commitment and personal development are hallmarks of this culture. The glue that holds this culture together is loyalty and tradition. Teamwork and participation are encouraged. The project manager functions as a flexible mediator in this culture.

- The creative culture is dynamic and entrepreneurial. Taking risks and being on the leading edge are hallmarks of this culture. The glue that holds this culture together is commitment to experimentation and innovation. Individual initiative and freedom are encouraged. The project manager functions as an independent innovator in this culture.

- The controlling culture is a formalized and structured place to work. Organization and efficiency are hallmarks of this culture. The glue that holds this culture together is formal rules and policies. Stability and predictability are encouraged. The project manager functions as an obedient servant in this culture.

- The competitive culture is goal-oriented and focused on results. Competitive action and achievement of target goals are hallmarks of this culture. The glue that holds this culture together is an emphasis on winning. Hard work and aggressive competition are encouraged. The project manager functions as a strong leader in this culture.

Cameron, K., & Quinn, R. (2011). Diagnosing and changing organizational culture : Based on the competing values framework, Third edition. Hoboken: John Wiley & Sons. (2011).

Appendix G

Construction Project Success Survey

Please respond to the following statements by indicating the extent to which you agree or disagree with the statement. Circle the appropriate number that most closely corresponds to your choice:

-3 – Strongly Disagree
-2 – Disagree
-1 – Somewhat Disagree
0 – Neutral or Undecided
+1 – Somewhat Agree
+2 – Agree
+3 – Strongly Agree

After choosing your response, please indicate how important you feel this issue is in determining the overall success of the project. Circle the appropriate response that most closely corresponds to your evaluation:

A – Low Importance
B – Medium Importance
C – High Importance
NA – Not Applicable

Cost											
1) Overall project cost performance was met based on baseline goals, targets, or expectations.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
2) Rework costs were well managed.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
3) Budget contingencies were well managed.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
4) Net profit targets were met.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
5) Market competition was well understood.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
Schedule											
6) Overall project schedule performance was met based on baseline goals, targets, or expectations.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
7) Material availability was well managed.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
8) Equipment availability was well managed.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
9) Labor availability was well managed.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
10) Schedule float management was optimized.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
Quality											
11) Overall project quality objectives were met based on baseline goals, targets, or expectations.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
12) Customer satisfaction was evidenced by direct feedback.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
13) Customer satisfaction was evidenced by the opportunity for follow-on work.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
14) The customer's true goals and expectations were properly reflected in contract performance incentives.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
Performance											
15) Project operational performance goals were met.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
16) A formalized method was established for managing project performance data (metrics).	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
17) Project performance data (metrics) updates were accurate throughout the life of the project.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA

Hughes, S. W., Tippett, D. D., & Thomas, W. K. (2004). Measuring project success in the construction industry. Engineering Management Journal, 16(3), 31-37. Retrieved from https://doi.org/10.1080/10429247.2004.11415255

18)	Project performance data (metrics) were in good alignment with informal customer feedback.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
19)	The performance data (metrics) were predictive of the final project outcomes.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
20)	Project personnel participated in the formulation of performance measurements.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
21)	Project personnel remained cognizant of performance measurements throughout the project.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
Safety												
22)	Overall project safety performance was met based on baseline goals, targets, or expectations involving OSHA total recordable injury rate.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
23)	Overall project safety performance was met based on baseline goals, targets, or expectations involving OSHA lost or restricted workday rates.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
24)	Project safety performance was commensurate with the experience levels of the craft workforce.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
25)	Hazard mitigation measures were well managed by the project team.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
26)	The trades and labor personnel were supportive of project safety practices as evidenced by the frequency of complaints and/or grievances.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
Operating Environment												
27)	Vendors and subcontractors complied with project schedule requirements.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
28)	Vendors and subcontractors complied with project documentation requirements.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
29)	The deployment of new technologies improved project performance.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
30)	The management of rework and repair conformed to baseline targets/expectations.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
31)	Regulator involvement (e.g., EPA, NRC, OSHA) was effectively managed, minimizing delays, rework, or harmful publicity.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA
32)	The training and experience gained on this project by the project team improves the marketplace qualifications of the organization.	-3	-2	-1	0	+1	+2	+3	A	B	C	NA

Hughes, S. W., Tippett, D. D., & Thomas, W. K. (2004). Measuring project success in the construction industry. Engineering Management Journal, 16(3), 31-37. Retrieved from https://doi.org/10.1080/10429247.2004.11415255

Appendix H

Physical Geographical Factors

Severe cold temperature snap to hit Fairbanks and interior Alaska

Posted: Thu 8:05 AM, Jan 12, 2017

ANCHORAGE, Alaska (AP) - The National Weather Service is warning interior Alaska to brace for a drop in temperatures next week.

Fairbanks most years sees temperatures of 40 below zero or colder and the weather service says those temperatures could arrive Monday morning.

The agency in a special weather statement says temperatures through Friday in the region north of the Alaska Range will cool and feature lows around 30 below.

Weekend lows are expected to rise to 20 below zero before colder air from the Arctic surges south.

Temperatures are forecast to fall into the minus 40 to minus 50 range in the upper Yukon Flats.

Daily high temperatures are not predicted to be much warmer.

The degree of cold will depend on skies. Cloudy skies could increase temperatures on the ground.

https://www.ktuu.com/content/news/Severe-cold-temperature-snap-to-hit-Fairbanks-and-interior-Alaska-410533715.html

Weather Alerts: Expect snow in Anchorage on Friday and Saturday

By Sidney Sullivan | Posted: Fri 4:38 PM, Jan 13, 2017 | Updated: Tue 12:13 PM, Feb 28, 2017

ANCHORAGE (KTUU) - The National Weather Service has issued a Winter Weather Advisory for snow from 9 p.m. Friday to 12 p.m. Saturday. Areas affected are to include Anchorage, the Eastern Alaska Range and the Mat-Su Valley.

Anchorage can expect 4 to 8 inches of moderate snowfall. Along the mountains and East Anchorage will accumulate the most snow.

The Eastern Alaska Range can expect 15 to 20 inches of snow. NWS says to expect blowing snow at times, and south winds are to gust 45 to 55 mph.

The Matanuska Valley can expect 4 to 7 inches of moderate snowfall. However, the area towards Hatcher Pass can expect 9 to 12 inches of snow.

And the Susitna Valley can expect 5 to 9 inches of snow.

NWS says that all these areas are to expect poor visibility, of one half mile or less, at times. Due to travel difficulties and snow covered roads, use caution while driving.

https://www.ktuu.com/content/news/Weather-Alerts-Expect-snow-in-Anchorage-on-Friday-and-Saturday-410693205.html

Alaska climate change is forcing some villages to relocate

The growing realization that such events are going to become more common as the result of global warming is forcing state officials to revisit how they prepare for and respond to natural disasters. (Source: MGN)

By Associated Press | Posted: Tue 6:01 AM, Jun 18, 2019 | Updated: Tue 6:18 AM, Jun 18, 2019

ANCHORAGE, (AP) - Accelerating erosion is forcing villages in western Alaska to begin making plans to move.

Alaska's Energy Desk reported Monday that erosion caused by climate change threatens village infrastructure and could force the relocation of communities such as Quinhagak.

A 2012 state report listed Quinhagak's sewer lagoon and multipurpose building as top priorities for replacement or repair because of erosion and thawing permafrost.

Officials say erosion now threatens Quinhagak's airstrip, water treatment plant and water and sewer system.

An official says he does not know how they would close up the lagoon if erosion causes waste to leak into the Kuskokwim Bay, an important food source.

Quinhagak has applied for a Bureau of Indian Affairs grant to help with moving and rebuilding the lagoon, which could cost $6 million.

https://www.ktuu.com/content/news/Alaska-climate-change-is-forcing-some-villages-to-relocate-511454991.html

BLM releases final ANWR environmental impact statement; opponents plan legal action

Pools of water in Arctic National Wildlife Refuge's coastal plain, Alaska (Photo from AP Images)

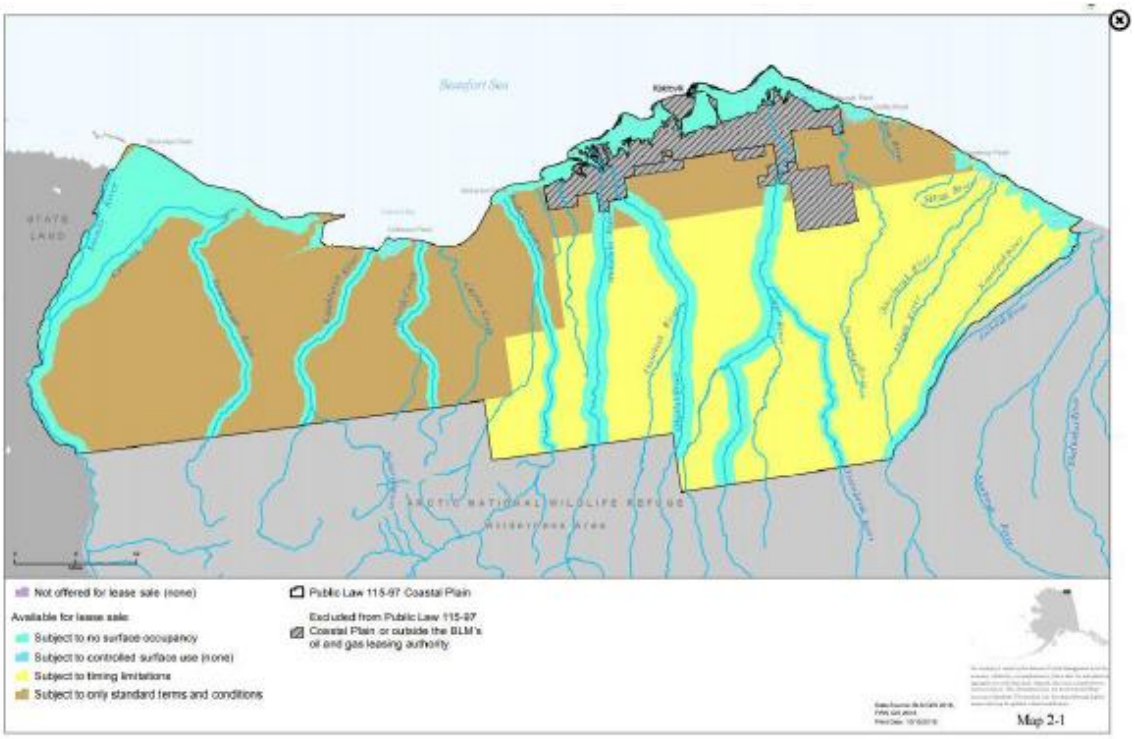
By Lex Treinen | Posted: Thu 2:09 PM, Sep 12, 2019 | Updated: Fri 12:01 PM, Sep 13, 2019

ANCHORAGE (KTUU) - The Bureau of Land Management released a final environmental impact statement for the Coastal Plain of the Arctic National Wildlife Refuge, moving one step closer to oil and gas lease sales over the area as the 2017 tax bill sets out.

BLM says that the preferred development scenario involves leasing the entire 1.5 million-acre Coastal Plain as "there would be the fewest acres with no surface occupancy (NSO) stipulations."

The EIS says the impacts resulting from the sale would include effects from "seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain" and outlines the effects on local subsistence users as "impacts on subsistence species and from direct disturbance of hunts, displacement of resources from traditional harvest areas, and hunter avoidance of industrialized areas."

https://www.ktuu.com/content/news/Bureau-of-Land-Management-releases-final-impact-for-ANWR-sales-560167671.html



Alternative B, which BLM selected as the preferred development option in its EIS, would open most of the 1002 Area with protections around riverine areas (Image from 2018 Draft EIS)

The EIS says the most directly affected communities are Kaktovik, who are the primary resource users in the area, while communities such as Nuiqsut, Arctic Village and Venetie could see effects on Porcupine and Central Arctic caribou herds, which breed in the area.

The release brought applause from Alaska's congressional delegation, which has long pushed for development of the Coastal Plain, also known as the 1002 Area.

"This is a major step forward in our decades-long efforts to allow for responsible resource development in Alaska's 1002 Area, and I thank Secretary Bernhardt and his team for their thousands of hours of hard work," said Alaska Senator Lisa Murkowski in a statement. "I'm hopeful we can now move to a lease sale in the very near future, just as Congress intended, so that we can continue to strengthen our economy, our energy security, and our long-term prosperity."

But the Gwich'in Steering Committee, which represents Gwich'in in Alaska and Canada opposed to the drilling, voiced strong opposition to the sale.

In a release, the group says that oil and gas drilling would disrupt the calving and nursing grounds for caribou, which Gwich'in in Alaska and Canada use for subsistence when they migrate inland.

The EIS, the release says, is a result of a "hasty, flawed, inadequate, and secretive review process" which began after the Draft EIS comment period closed in March of this year after being extended by 30 days. The EIS says that it received over a million comments but that only about 4,000 of them were "substantive," meaning that repeat comments from letter campaigns.

https://www.ktuu.com/content/news/Bureau-of-Land-Management-releases-final-impact-for-ANWR-sales-560167671.html

"There is nothing final about this EIS process except that it demonstrates that this administration and the Alaska delegation will disregard our way of life, our food, and our relationship with the land, the caribou, and future generations to pander to industry greed," said Bernadette Demientieff, executive director of the Gwich'in Steering Committee in the release.

A lease sale could come as early as October, after a 30-day review period expires. The 2017 tax bill requires that there be at least two lease sales held by the end of December, 2024 offering at least 400,000 acres each.

A bill was passed in the US House that would stop all lease sales in ANWR, but it is unlikely that it will be heard in the Senate.

Still, Dementieff of the Gwich'in Steering Committee said that that bill, which passed the house today by a 225-193 vote, was important to show the will of the American people and indigenous people in particular, but she acknowledged that that hearing in the senate was unlikely.

She said the primary strategy will be legal action. Speaking from Washington D.C., where she was observing the passage of the bill to prevent drilling in ANWR, Dementieff said that she was looking over options with attorneys.

"We're definitely taking them to court," she said. "We're gonna push the science on it. They're literally pushing this through, it's really sloppy."

Another potential avenue for legal challenges was the lack of government-to-government consultation, including with Canadian Gwich'in, according to Dementieff. According to the EIS, the bureau they consulted with affected tribal entities, as well as the Canadian government and the International Porcupine Caribou Board, though individual tribal governments in Canada do not appear to have been consulted.

But Dementieff said that all options are on the table for now.

"We're gonna look at every level of defense for the refuge," she said.

https://www.ktuu.com/content/news/Bureau-of-Land-Management-releases-final-impact-for-ANWR-sales-560167671.html

EPA administrator says he will not make Pebble Mine decision

(KTUU)

By Associated Press | Posted: Thu 9:05 PM, Aug 22, 2019

ANCHORAGE, Alaska (AP) - The head of the Environmental Protection Agency says approval of an application for an Alaska mine will not be his decision.

Alaska Public Media reported Thursday that EPA Administrator Andrew Wheeler has recused himself from deliberations over Pebble Mine due to past work at a law firm hired by the project.

Wheeler has left the decision to the EPA's top lawyer.

Wheeler spoke about easing industry regulations at a Resource Development Council luncheon in Anchorage Tuesday.

Bristol Bay fishing communities have campaigned against the proposed gold and copper mine in southwest Alaska for more than a decade.

Other Alaskans including some from villages close to the site say they would welcome the jobs.

The EPA can veto Pebble's application, even if the Army Corps of Engineers approves the project.

—

Information from: KSKA-FM, http://www.kska.org

https://www.ktuu.com/content/news/EPA-administrator-says-he-will-not-make-Pebble-Mine-decision-557954791.html

ANCHORAGE DAILY NEWS

Weather

Flood watch issued for Denali National Park and nearby areas

Author: **Associated Press** Updated: August 12 Published August 12

FAIRBANKS - Heavy rain is forecast for Denali National Park and the National Weather Service has issued has a flood watch for the area.

The Fairbanks Daily News-Miner reports the flood watch will begin at 6 a.m. Tuesday and last until noon Wednesday.

National Weather Service forecaster Jim Brader says the agency is expecting up to 1.5 inches of rain starting Monday night and extending into Tuesday, with a potential for mudslides and stream flooding.

Heavy rain last week caused flooding in Healy.

Denali Borough Mayor Clay Walker declared a local disaster after damage to roads and a bridge.

The Denali Park Road closed for a time Thursday after rain created the potential for debris flow and mudslides.

Heavy rain also is expected in Fairbanks.

https://www.adn.com/alaska-news/weather/2019/08/12/flood-watch-issued-for-denali-national-park-and-nearby-areas/

Flooding In Alaska: What You Should Know

Release date:
December 1, 2006

Release Number:
1663-009

ANCHORAGE, Alaska -- Flooding is common throughout Alaska, whether from flowing waters of rivers, streams and coastal storms or, as happened during Thanksgiving along the Bodenburg Creek in Butte, from deep ice buildup forcing water to overflow the bank.

"While the recent flooding along Bodenburg Creek was unusual in a historical sense, ice jam flooding in Alaska is not unusual," said Christy Miller, Alaska Floodplain Manager. "The bottom line is that individuals who live within 100 feet of moving water are at risk for flooding, including coastal communities where severe storms and erosion cause flooding of low or susceptible areas."

There are a number of protective measures to take to avoid flood damage. Determine how high flood waters are likely to get on your land and in what direction and speed the water is likely to flow.

Move outdoor storage and parking above the potential flood water level whenever possible. Securely anchor buoyant items such as oil and propane tanks, or firewood stacks to keep them from floating away. Do not store trash or waste where it may be reached by flood waters. Install backflow prevention valves in septic lines and locate outhouses on the higher ground above flood levels. Seal or raise the tops of well casings and monitoring tubes. Raise generators, pumps, electrical outlets, appliances, stands and shelving above water levels. Make sure pets can reach safety above flood waters without help.

Thirty-two of Alaska's cities and boroughs participate in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). These communities have access to flood maps that can help businesses, homeowners, or renters determine if they are in a flood plain.

FEMA and the State of Alaska offer several resources for information about flood risk and flood protection. A list of NFIP communities can be found on FEMA's Floodsmart Web site at www.floodsmart.gov. Click on What's Your Flood Risk,

https://www.fema.gov/news-release/2006/12/01/flooding-alaska-what-you-should-know

enter your address, click on View a List of Communities Participating in the National Flood Insurance Program, and click Alaska. Individuals may also go to the state's Web site at www.commerce.state.ak.us, or call the State's Floodplain Manager at 269-4583.

FEMA manages federal response and recovery efforts following any national incident, initiates mitigation activities and manages the National Flood Insurance Program. FEMA works closely with State and local emergency managers, law enforcement personnel, firefighters, and other first responders. FEMA became part of the U.S. Department of Homeland Security on March 1, 2003.

Last Updated:
January 3, 2018 - 12:38

https://www.fema.gov/news-release/2006/12/01/flooding-alaska-what-you-should-know

FEMA officials tour Matanuska River in roll out of $4.2 million flood mitigation program

By Hank Davis | Posted: Wed 9:47 PM, Apr 24, 2019 | Updated: Wed 10:01 PM, Apr 24, 2019

Palmer, ALASKA (KTUU) — Local, state and federal officials toured areas of Mat-Su Borough affected by soil erosion along the Matanuska River Wednesday to help persuade home owners along a stretch of river to get out of the imminent path of the river.

David Maurstad, the Federal Emergency Management Agency's Deputy Associate Administrator for Insurance and Mitigation is in Alaska this week to tour areas impacted, part of a $4.2 million flood mitigation program.

Soil erosion along the Matanuska River has been a growing problem in recent years.

As part of the FEMA program, 10 properties in the Butte and five in Sutton were deemed eligible for buyouts based on risk of loss or damage caused by eroding soil. FEMA will provide 75 percent of the funds required to backstop state and local governments.

[***Related:*** **Elderly couple fears erosion will destroy Alaskan home**]

Mat-Su Borough Assemblyman Jim Sykes says that over the years, the construction of dikes and the digging of revetments have proven to be temporary solutions to a long-term problem, and all at high costs.

Now, the hope is that buyouts will help relocate residents in impacted areas to safer locations while the river runs its inevitable course.

Some of the home and business owners who have been offered buyouts are taking the money, while others are staying put despite warnings.

https://www.ktuu.com/content/news/FEMA-officials-tour-site-of-42-million-dollar-flood-mitigation-program-509039361.html

RIVERS

A home on the Matanuska River threatened by erosion. July 7, 2017 (KTUU)

https://www.ktuu.com/content/news/FEMA-officials-tour-site-of-42-million-dollar-flood-mitigation-program-509039361.html

In this Landsat satellite image of Cape Halkett, Alaska, a landscape of thawing permafrost appears like a section of white and grey bone, full of openings. Blue and green indicate where open water has increased from 1955 to 2005. Smaller areas of reddish orange show land gained. Landsat gives us a special vantage point to monitor changes in the landscape over time. Image credit: Mars/Houseknecht, USGS.

www.nasa.gov

https://landsat.gsfc.nasa.gov/pdf_archive/cape_halkett_4web.pdf

Melting Permafrost Causes Coastal Erosion

Goddard Space Flight Center

The low-lying Arctic coastal plain of Alaska north of Teshekpuk Lake on the Beaufort Sea hosts endangered species of waterfowl, provides calving grounds for large herds of caribou, and contains potentially significant petroleum resources. For tens of thousands of years, underlying this special place has been permafrost—defined as permanently frozen ground that remains at or below 0° C (32° F) for at least two years at a time. Not only wildlife, but people too, have built their lives and livelihoods on permafrost in Alaska. Roads, buildings, and pipelines rest and rely on hard permafrost foundations. But permafrost is sensitive to climate change, and powerful warming forces are at work.

Continuous permafrost on the North Slope of Alaska has warmed 2.2–3.9° C (4–7° F) over the last century. Thawing permafrost is more prone to erosion, and erosion means the loss of land. Thawing also produces excessive wetting and plasticity and makes sediments unstable. Thawing of permafrost and cycles of freezing and thawing cause extensive damage to highways, railroads, airstrips, and other facilities. Many native villages are located on low-lying rivers and coasts where they may be susceptible to erosion due to melting permafrost. Combating eroding community infrastructures takes time and labor away from the activities required for survival.

Governments and communities are concerned about these changes. To make the images on the other side of this lithograph, scientists at the U.S. Geological Survey analyzed Landsat data and topographic maps compiled from aerial photographs. They found that land loss in the study area more than doubled from 1985–2005, compared to the 30-year span from 1955–1985. In some areas, coastal erosion has caused the shoreline to recede as much as 0.9 km (0.56 mi) over the last 50 years.

"This area's increased rate of coastal erosion over these time increments may be the result of greater wave action caused by earlier seasonal melting and reduced size of the Arctic ice pack, which warrants further study," said USGS scientist Lyle Mars. "Since beaches are absent or poorly developed along most of the studied coast, there is little, if any, protection against this increased wave energy. As a result, the waves undercut the mud-rich permafrost land, causing it to collapse into the sea."

Thawing permafrost has another important implication for the welfare of people and ecosystems. Gases trapped in permafrost, such as carbon dioxide and methane, are released when it melts. Those greenhouse gases warm the atmosphere. Methane is 25 times more potent than carbon dioxide as a greenhouse gas. If the high northern latitudes continue warming at current rates, the region's soils will release more carbon and methane into the atmosphere, which may lead to higher temperatures that fuel a feedback cycle of carbon and methane release and temperature rise. Thawing permafrost may lead to an acceleration in the rate of climate warming.

About Landsat

Landsat satellites provide an unparalleled record of Earth's varying landscapes to help us understand how Earth is changing and what those changes mean for life on our planet. The consistency of Landsat's data from sensor to sensor and year to year makes it possible to trace land cover changes from 1972 to the present. Landsat sensors have captured over two million digital images of Earth's continents and surrounding coastal regions. These digital images include information from wavelengths of light both visible and invisible to human eyes. NASA designs the Landsat Earth-observing satellites; USGS manages the satellites, archives the imagery, and makes the data available to all interested users.

Landsat Program

http://landsat.gsfc.nasa.gov
http://landsat.usgs.gov

https://landsat.gsfc.nasa.gov/pdf_archive/cape_halkett_4web.pdf

Location of Cape Halkett on Alaska's northern coast.

International Permafrost Association
http://www.ipa-permafrost.org

Alaska Coastal Erosion
http://energy.usgs.gov/alaska/ak_coastalerosion.html

Intergovernmental Panel on Climate Change
http://www.ipcc.ch

Monitoring Land Change with Landsat
http://change.gsfc.nasa.gov

Source Reference
Quantitative Remote Sensing Study Indicates Doubling of Coastal Erosion Rate in Past 50 Years along a Segment of the Arctic Coast of Alaska
by John Mars and David Houseknecht, both USGS
http://energy.usgs.gov/flash/AKcoastalErosion.swf

For more products like this one:
http://landsat.gsfc.nasa.gov/education/resources.html
(Scroll down to "Landsat Lithographs.")

NASA (2019). Retrieved from https://landsat.gsfc.nasa.gov/pdf_archive/cape_halkett_4web.pdf

NPS.gov / Home / Science / Climate Change / Permafrost

Permafrost

Permafrost is permanently frozen ground that underlies much of the landscape in the Arctic. It affects nearly everything in the Arctic ecosystem, including soils, vegetation, water, and wildlife. During summer months, the top layer of soil thaws creating a wet landscape with rapid runoff. The striking quilt-like pattern of permafrost landscapes is caused by the build-up and thawing of ice in the ground, which produces pits, ponds, and landslides. Annual permafrost thaw is normal, but thawing is expected to increase with climate change. The National Park Service is monitoring permafrost and the land dynamics associated with permafrost thaw to better understand the changes and the effects on the landscape.

Exposed yedoma permafrost exposed along an eroded Arctic coast.

National Park Service (2019). Permafrost. Retrieved from https://www.nps.gov/subjects/aknatureandscience/permafrost.htm

Permafrost Terminology

Permafrost
ground that remains frozen longer than two consecutive years; ground that doesn't thaw in the summer

Yedoma
an organic-rich Pleistocene-age permafrost with high ice content

Active Layer
in areas with permafrost, the top portion of the soil that thaws and refreezes each year

Ice Wedge
polygon-like pattern on the landscape associated with permafrost caused by repeated cycles of melting, freezing, and cracking

Thermokarst
landscape formations associated with permafrost thaw

Pingo
an earth-covered mound of ice, which creates topography and provides habitat for arctic foxes

Slump
a term that refers to the sagging or degradation of the landscape caused by permafrost thaw

Hydrology
the study of the location, movement, and quality of water on earth; heavily influenced by permafrost in Arctic systems

Erosion
the transport of soil and rock from the earth's surface by wind or water; a significant effect of permafrost thaw

National Park Service (2019). Permafrost. Retrieved from https://www.nps.gov/subjects/aknatureandscience/permafrost.htm

ANCHORAGE DAILY NEWS

7.0 earthquake, aftershocks strike Southcentral Alaska; damage reported across region

Author: Zaz Hollander, Devin Kelly Updated: December 2, 2018 Published November 30, 2018

Vine Road, south of Wasilla, was heavily damaged by an earthquake on November 30, 2018. (Marc Lester / ADN) Buy This Photo

A 7.0 earthquake jolted Anchorage and the rest of Southcentral Alaska on Friday morning, cracking and collapsing roads and highways, damaging buildings, knocking out power and sending people scrambling outside and under furniture. The shaking left many homes a mess and aftershocks continued through the night and into Saturday morning.

A number of injuries, at least one serious, were reported in Anchorage and the Matanuska-Susitna Borough. A homeowner fighting a fire caused by the earthquake at his home in Houston suffered serious airway burns,

https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

Houston fire officials said. Hospitals in Anchorage and Mat-Su reported injuries such as lacerations from broken glass. A patient came to Alaska Regional Hospital with a broken arm.

The earthquake's epicenter was in the Mat-Su Borough, on Point MacKenzie to the north of Joint Base Elmendorf-Richardson, according to the Alaska Earthquake Center. It violently shook the most populous region of the state at about 8:30 a.m., just as people were settling in to work and school, but was felt as far as Tok and Valdez.

Some people ducked under tables for cover. Others braced beneath doorways, riding out the seismic roller coaster amid the sound of breaking glass and falling photos.

Seismologists called the quake the most significant in the state's largest city since the 1964 Good Friday earthquake, in terms of how strong the ground itself shook.

"What happened in Anchorage was an emotionally disturbing event, a lot of people were very scared," state seismologist Michael West said.

Near the quake's epicenter on Point MacKenzie, the shaking started as Gary Foster was getting his 7- and 10-year-olds ready for the school bus.

The house went dark. Foster grabbed a light and raced up pitch-black undulating stairs to grab his 5-year-old daughter in a second-floor bedroom before running back down, the whole place still gyrating, and outside with his family.

"We went out and stayed in the car for a couple hours just to see what it was going to do," he said."I just didn't trust it to come back in."

Gov. Bill Walker issued a declaration of disaster Friday morning that was approved Friday afternoon by the Federal Emergency Management Agency.

The quake inflicted serious structural damage on roads and bridges throughout the region. Some roads, especially in the Mat-Su, remained impassable Friday afternoon. Schools in Anchorage and Mat-Su are closed until Wednesday so officials can check for damage.

The city of Anchorage declared a civil disaster declaration to access state resources, Mayor Ethan Berkowitz told reporters Friday.

"The amount of infrastructure damage has been mitigated in large part by how we build things here and the level of preparation," Berkowitz said.

> "This is another ground motion visualization showing the motion of the ground recorded by the USArray during the Anchorage earthquake (https://t.co/RIcNz4bgWq). #AnchorageEarthquake #earthquake pic.twitter.com/5ZbzvXOj5l— IRIS Earthquake Sci (@IRIS_EPO) December 1, 2018

https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

The quake spawned more than 200 aftershocks in 12 hours, including a sharp jolt felt widely in Anchorage around 10:26 a.m. and another series of aftershocks just before 11 a.m. At least four of the aftershocks were 5.0 and one measured 5.7. Lighter aftershocks continued to be felt through the afternoon and evening.

The earthquake shook buildings violently, cracking walls, making some store floors a mess, and leaving office desks covered with dust from shaking ceiling tiles. Home chimneys crumbled, garages collapsed, and household items shattered on the floor.

A tsunami warning for Southcentral Alaska including Kenai, Kodiak and the shores of Cook Inlet was canceled around 10 a.m. The trans-Alaska pipeline was shut down as a precaution, according to Alaska Pipeline Services. It was restarted Friday afternoon.

Hospitals in Anchorage canceled elective surgeries and kept only emergency rooms open. Mat-Su Regional Medical Center remained open.

Road damage

The Glenn and Seward highways in town reopened early Friday afternoon, according to an update from Anchorage police. But detours and delays continue.

Damage was a moving target, with new updates still coming in Friday evening.

There were several reports of serious road damage. The Glenn Highway had closed north of Eagle River because of damage to the southbound Eagle River bridge, and an on-ramp at the interchange of International Airport Road and Minnesota Boulevard collapsed.

A section of highway between Eklutna and Mirror Lake cracked and crumbled, closing southbound lanes for several days, according to Alaska Department of Transportation project engineer Rod Cummings. Southbound traffic will be routed around the area until crews can repair the damage.

The Palmer exit off the highway was closed after a gap appeared between the abutment and the bridge, officials said.

Vine Road near Wasilla also suffered major damage and a section is closed. From above, the heavily used connector road looked like a giant bowling ball hit it. Point MacKenzie Road sustained serious damage as well.

"This was a big one," DOT spokeswoman Shannon McCarthy said.

Other closures included periodic detours at Knik River Bridge; detours on Dowling Road at C Street due to a large crack in the roadway; and detours on Eagle River Loop Road at Mills Bay Drive due to a sinkhole.

https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

The Seward Highway south of Anchorage was closed at Mile 112 — McHugh Creek — in both directions because of a rockslide but reopened by Friday afternoon.

Damage through Southcentral

The Federal Aviation Administration control tower at Ted Stevens Anchorage International Airport was not allowing arrivals as of noon Friday, FAA spokesman Allen Kenitzer said in an email. By early afternoon, the stoppage was lifted and both arrivals and departures were allowed.

Anchorage fire chief Jodie Hettrick told reporters on Friday morning that visitors to Anchorage should prepare to stay with family or friends Friday night, as well as residents without power. Four emergency shelters have opened in the quake's aftermath: at the Egan Center in downtown Anchorage, the Chugiak-Eagle River Senior Center, the Curtis D. Menard Memorial Sports Center in Wasilla and the Girdwood Fire Department.

Anchorage and Mat-Su fire crews responded to a number of fires and collapsed buildings after the shaking stopped. There were four structure fires in Anchorage, and Hettrick said she was still getting details on the collapsed buildings, but they appeared to be smaller structures.

Officials with the Anchorage Water and Wastewater Utility also reported more than two dozen pipe breaks throughout the city. The utility fielded about 70 requests to turn off residential water service because of flooding, officials said.

Anyone who notices major structural cracks in their home should evacuate, Hettrick said.

Officials with the Anchorage Water and Wastewater Utility also reported numerous pipe breaks throughout the city.

The Alaska Railroad shut down all operations due to severe damage at the railroad's Anchorage Operations Center on Ship Creek, including the dispatch center, according to spokesman Tim Sullivan. The center is closed by flooding from burst pipes and the power is out.

No trains were running when the quake hit, but service can't resume until crews assess damage, Sullivan said. It will be a day or two before that happens.

https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

Power outages and gas leaks

There were reports of power and phone outages in the region. Traffic was backed up throughout Anchorage as people headed home to check on damage, and some traffic lights had gone dark.

The Southcentral Alaska gas utility, Enstar, had received more than 300 reports of natural gas leaks by late afternoon, officials said.

Utilities planned to work into the night to restore service to customers.

Matanuska Electric Association, based in Palmer but with members to Eagle River, reported 50,000 members without power just after the quake. Chugach Electric Association reported more than 8,500 without power initially.

The power stayed on at the University of Alaska Anchorage, but the campus was closed as was Mat-Su College.

> Major earthquake in Anchorage this morning. @uaanchorage is closed. We have some damage. Currently assessing. No word of injuries, thankfully. Power still OK. This is one of our conference rooms. Kudos to our Incident Management Team for quick response. We are fortunate. pic.twitter.com/ZffVAwuIbY— Cathy Sandeen (@CathySandeen) November 30, 2018

All Southcentral jails were operating on generator power in the hours after the earthquake. The Anchorage jail complex and Hiland Mountain Correctional Center in Eagle River both had water line breaks that caused a temporary shut off all water, according to DOC spokeswoman Megan Edge.

Hiland was also without heat for much of the day. By Friday evening, the heat was back on at Hiland except for in two housing units, said Edge. The facilities were considered "safe and secure," she said.

Alaska postal officials announced a temporary suspension of mail delivery and retail operations in Anchorage, Eagle River and Wasilla due to the earthquake, according to an announcement Friday afternoon.

Some deliveries were made across the area, but delivery operations were suspended at the request of state and local emergency operations.

People Mover suspended service as a precautionary measure due to the earthquake, but planned to restore service Saturday. All rides will be free Saturday and Sunday.

Alex DeMarban, Annie Zak, Marc Lester, Madeline McGee, Loren Holmes, James Brooks, Matt Tunseth and Julia O'Malley contributed to this story.

https://www.adn.com/alaska-news/2018/11/30/large-earthquake-strikes-southcentral-alaska/

ANCHORAGE DAILY NEWS

Alaska News

Crews reopen Denali Park Road after mudslides, water damage; stranded tourists leave

Author: Associated Press Updated: August 17 Published August 16

A line of tourist buses stop to look at caribou along the park road in Denali National Park and Preserve on Thursday, May 19, 2016. (Bob Hallinen / ADN archive)

DENALI NATIONAL PARK — Road crews have cleared one lane in Alaska's Denali National Park and Preserve, and buses returned about 300 stranded tourists to the park entrance safely.

The tourists became stranded Friday after heavy rains triggered mudslides and caused excess water from a culvert to damage the only road inside the vast park.

https://www.adn.com/alaska-news/2019/08/17/mudslides-leave-300-tourists-stranded-in-denali-national-park/

Park spokesman Paul Ollig told The Associated Press that all the stranded passengers were back at the park entrance by midnight.

"Our team did an outstanding job responding to multiple debris slides along a pretty remote section of road," said Erika Jostad, Denali's chief ranger. "The geohazard team monitored conditions while the road crew was clearing debris. It was a great example of teamwork."

On Saturday, the park announced that the road will be fully open at 5 a.m. Sunday.

"Park staff have done a remarkable job responding to this incident and ensuring the safety and comfort of park visitors," Jostad said. "Folks from all disciplines have come together to safely accomplish this important task."

Earlier Friday, Denali's superintendent closed Denali Park Road to all traffic at Mile 30.

Similar debris flows led to daylong traffic restrictions last week. Continued heavy rains since kept the road and surrounding tundra saturated with water.

Also on Friday, the Alaska Railroad said in a release that it has halted service north of the park because heavy rainfall had caused erosion below a retaining wall.

Passenger and freight service will be suspended through the area until late Monday at the earliest, the railroad said in a statement.

The railroad added that passengers traveling north to or south from Denali Park on the Alaska Railroad or on an Alaska Railroad provided service through Holland America/Princess or Premier Alaska Tours should expect delays.

https://www.adn.com/alaska-news/2019/08/17/mudslides-leave-300-tourists-stranded-in-denali-national-park/

Sea-ice loss at the top of the world just the tip of the iceberg, researcher says

By Derek Minemyer | Posted: Sun 5:37 PM, Aug 25, 2019 | Updated: Sun 11:25 PM, Aug 25, 2019

ANCHORAGE, Alaska (KTUU) - Arctic summer sea-ice cover is steadily melting as the climate warms, according to researchers. Exactly how fast it's melting – and what this means for everyday Alaskans – is what science is only beginning to understand.

Satellite imagery of the summer ice cap, which is the smallest the Arctic sea ice gets just before winter freeze-up begins, shows a nearly 41 percent reduction in size between 1979 and 2018. Scientists from Canada and Alaska say this rapid ice melt has both local and global climate impacts.

"It's a new frontier," said Rick Thoman, climate specialist at the International Arctic Research Center in Fairbanks. "And the frontier keeps moving down the road, even as we try to pedal faster."

Thoman spent over 30 years analyzing climate patterns with the National Weather Service. He builds on that knowledge by providing ice melt forecasts for rural communities, which rely on the ice for subsistence hunting in the Northern Bering and Southern Chukchi seas.

"Understanding the past and preparing for the future is critical for the diverse people's economies and resources in Alaska and the Arctic," Thoman said. "Potentially, communities can use that information to plan their activities: 'Should we hunt now, even if we prefer to wait another week from now? If the ice is going to go bad, maybe we need to act now."

Thoman says the Chukchi Sea is seeing record low ice levels – that Alaska's 2019 record warm summer will delay this year's winter freeze-up. This means progressively thinner winter ice and earlier spring melt, and many researchers agree this is a recipe for regional and global climate change.

https://www.ktuu.com/content/news/Sea-ice-loss-at-the-top-of-the-world-just-the-tip-of-the-iceberg-researcher-says-558254521.html

(UAF)

"We are all in this together," Thoman said. "There is nothing between Utqiagvik and Norway except a lot of ocean, and seasonally at least, a lot of ice."

Dr. Julienne Stroeve chairs Canada-150, a 7-year, $12 million Arctic research program at the Centre for Earth Observation Science at the University of Manitoba. Stroeve recently published an article in Scientific American using satellite imagery to show actual sea-ice loss is outpacing what some climate models have been able to predict.

"The extent of sea-ice loss at the top of the world, as seen by satellites, is literally the tip of the iceberg," Stroeve's article reads. Stroeve says newer climate models, however, are predicting something previously unheard-of in the scientific community.

"They're showing consistent ice-free summers sometime during this century, but the *winter* sea ice was never really thought to disappear," Stroeve said. "Some of these ice models are showing winter ice disappearing by 2100, as well." She acknowledges more data is needed to validate that startling projection.

Record warm Arctic temperatures and sea-ice loss work in tandem to increase global temperatures. Stroeve says Canada and Alaska are at the forefront of these changes, but the entire world will feel the resulting climate impacts.

"Our climate system is really governed by these connections between these different regions, so if you're warming up the Arctic so much faster than the rest of the planet, it's going to impact your large-scale weather patterns," Stroeve said.

"You have this accelerated warming because the Arctic sea ice has been disappearing, which is impacting on permafrost thaw," she continued. "So coastal erosion is a big problem that a lot of communities are having to deal with in Alaska now."

https://www.ktuu.com/content/news/Sea-ice-loss-at-the-top-of-the-world-just-the-tip-of-the-iceberg-researcher-says-558254521.html

ANCHORAGE DAILY NEWS

Business/Economy

With sea ice still melting, vessels doing Arctic transits stop at Nome late in season

Author: Davis Hovey, KNOM Updated: September 10 Published September 10

The Port of Nome at the mouth of the Snake River, June 2018. (Gabe Colombo, KNOM)

NOME -- Marine vessels of all sizes transiting through the Arctic Ocean this season, some starting from Nome, have a couple of options for ice-free routes.

According to the National Snow and Ice Data Center, Arctic sea ice loss will likely continue for several weeks.

https://www.adn.com/business-economy/2019/09/10/with-sea-ice-still-melting-vessels-doing-arctic-transits-stop-at-nome-late-in-season/

The center says that as of Aug. 31, sea ice extent dropped to the third lowest on satellite record for that day: 1.78 million square miles. Around that same time, sea ice concentrations within the Northwest Passage were tracking below the average recorded between 1981 and 2010.

Mark Serreze, the director of the National Snow and Ice Data Center, says at least part of the passage seems to be quite navigable.

"When you think about the Northwest Passage, it's not just one passage. It's actually a number of ways you can get through those islands in the Canadian Arctic archipelago, and if you were a real deep-draft ship, you'd want to go through this northern passage, kind of north of Banks Island, but that still has a lot of ice in it," Serreze said. "It looks very unlikely that that's going to open up this year. The southern route through the Northwest Passage looks to be pretty much clear sailing."

For the northern route through the Passage, NSIDC says ice coverage is slightly below the 30-year average, while the southern route, which is the path Roald Amundsen took, is well below the average ice extent and is expected to be completely clear in the coming weeks.

This would allow polar adventurers Borge Ousland and Mike Horn, who were in Nome recently aboard the sailboat Pangaea, to travel farther into the Arctic Ocean before hitting ice.

According to Horn, their journey will include skiing and walking across the frozen Arctic Ocean directly to the North Pole, then end near the Norwegian archipelago of Svalbard, which could take months to complete.

"Our time in Nome was spent fixing the boat, getting the equipment for the Arctic crossing ready, and meeting up with friends. The friends I have in Nome went out of their way to help us as much as they could. Really without them, an expedition like this couldn't happen, because they make things happen."

Horn has had equipment issues thus far on his trip, and reportedly made unplanned stops in Teller and Wales to pick up new water pumps last week.

Going parallel across the opposite side of the Arctic, in a little more luxurious fashion, is the European cruise ship the Silver Explorer. It left Nome in early August and sailed through the Northeast Passage, also referred to as the Northern Sea Route, with an escort from a Russian icebreaker. According to Silversea Expeditions, the vessel arrived in Tromsø, Norway, more than three weeks after leaving Nome.

According to the Canadian Coast Guard, more than 15 international cruise ships will attempt at least part of the Northwest Passage this season, including the MV Roald Amundsen. Norwegian company Hurtigruten seeks to have Amundsen be the first hybrid vessel to traverse the Arctic route later this month.

The Amundsen is expected to end its journey in Nome on Sept. 11. Serreze cautions any crew attempting to sail through the Northwest Passage right now to be vigilant.

https://www.adn.com/business-economy/2019/09/10/with-sea-ice-still-melting-vessels-doing-arctic-transits-stop-at-nome-late-in-season/

ANCHORAGE DAILY NEWS

Alaska News

Black bear kills mine worker, injures another in Interior Alaska

Author: Jerzy Shedlock Updated: December 2, 2017 Published June 19, 2017

An official for Pogo Mine in Interior Alaska said a contract employee died in a black bear mauling that happened several miles from the mine's main camp Monday.

A second contract employee sustained non-life-threatening injuries and is being taken to Fairbanks Memorial Hospital, said Pogo Mine external affairs manager Lorna Shaw.

The employees who were mauled by the bear worked for a contractor hired to take geological samples; they were working at an exploration site several miles from the main camp when the bear attacked, Shaw said.

The mine is about 38 miles northeast of Delta Junction.

"A mayday was called and in accordance with site emergency response procedures, a helicopter responded with a paramedic and a physician's assistant on board," Shaw said. The medical team responded at 10:40 a.m., she said.

All field workers were called back to camp. At the direction of wildlife troopers, the black bear was killed, Shaw said.

Megan Peters said Alaska Wildlife Troopers are responding to investigate.

An official with the U.S. Mine & Safety Administration said the agency is also on its way to the worksite. The safety officials will conduct an initial investigation to determine whether it falls within their legal jurisdiction.

Pogo Mine runs year round, and workers live at a remote camp where they mine gold and process ore, according to the company's website.

"Right now we have more questions than answers. Everyone on site is concerned for those involved," said Chris Kennedy, general manager at Pogo Mine, in a statement. "Our condolences have been shared with our contractor and our hearts go out to the individuals, their colleagues, and their families."

https://www.adn.com/alaska-news/2017/06/19/officials-fatal-bear-mauling-reported-at-pogo-mine-near-delta-junction/

Shaw said previous years involved instances with nuisance bears, though there were never attacks or damage to company property. There appeared to be less bear activity this year, up until Monday's attack, she said.

The mauling is the second fatal bear attack in only two days. A 16-year-old runner in a Bird Ridge mountain race was killed by a black bear he encountered while descending the trail Sunday, troopers said.

https://www.adn.com/alaska-news/2017/06/19/officials-fatal-bear-mauling-reported-at-pogo-mine-near-delta-junction/

ANCHORAGE DAILY NEWS

Wildlife

Brown bear sow with cubs kills mine worker in Southeast Alaska

Author: Laurel Andrews Updated: October 2, 2018 Published October 1, 2018

A worker at the Greens Creek Mine in Southeast Alaska was fatally mauled by a bear Monday morning.

Troopers got a report of a mauling at the mine, on Admiralty Island, at 8:44 a.m.

Troopers later identified the victim as Anthony David Montoya, 18, of Hollis, Oklahoma.

"Montoya was mauled by a sow and two cubs. All three bears were killed prior to troopers arriving on scene," troopers said.

Brown bears are the only type of bear on Admiralty Island, said Ken Marsh, spokesman for the Alaska Department of Fish and Game.

Montoya was a contract employee with the mine, according to a statement from Mike Satre, spokesman for Hecla Greens Creek Mining Co. Montoya worked for Timberline Drilling, a company based in Coeur d'Alene, Idaho, which contracts with the mine.

"This is a tragic incident. Bears are regular visitors in and around our workplace, however this is the first time since the mine opened almost 30 years ago that a bear encounter has resulted in an injury of any kind," Satre said.

The mauling happened at a remote drill site that is accessible only by helicopter, Satre said.

Greens Creek Mine primarily produces silver, according to the company's website.

https://www.adn.com/alaska-news/wildlife/2018/10/01/person-reported-dead-in-bear-mauling-near-southeast-alaska-mine-troopers-say/

KTVA
The Voice of Alaska

Air Quality and Visibility: How you can tell if the air is healthy

Wednesday, August 21st 2019, 3:28 PM AKDT
By: Jeremy LaGoo

Air quality continues to fluctuate between healthy and hazardous levels throughout Southcentral due to wildfires continuing to burn in the region. There are currently more than 200 wildfires around the state. With so many different fires emitting smoke into the atmosphere, air quality can quickly change. Those changes often happen faster than updates or advisories can be issued, but there is a way you can tell how unhealthy the air is at any given moment.

Visibility and air quality are closely related when it comes to smoke. Reduced air quality correlates to reduced visibility. Or simply, the more haze there is in the sky, the less healthy the air.
Here is a general guide to air quality as it relates to visibility in wildfire smoke:

https://www.ktva.com/story/40947304/air-quality-and-visibility-how-you-can-tell-if-the-air-is-healthy

Visibility	Air Quality
10+ miles	Good
6 – 9 miles	Moderate
3 – 5 miles	Unhealthy for sensitive groups
1.5 – 2.5 miles	Unhealthy
0.9 – 1.4 miles	Very Unhealthy
0.8 miles or less	Hazardous

When it comes to what each category and how the hazards break down for each individual, there is a set of rules to follow.

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects.
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

This is just a general guideline; be sure to check with your doctor for your individual concerns and needs. In Anchorage, a good way to determine visibility is to use the mountains. Depending on what part of town you are in, the Chugach Mountains are just about the right distance to determine whether or not the air is healthy. A basic rule of thumb is, if you can't see the mountains, the air is unhealthy. Based on what part of town you are in, you can look at the mountains to determine the current level of air quality.

https://www.ktva.com/story/40947304/air-quality-and-visibility-how-you-can-tell-if-the-air-is-healthy

Visibility is typically measured at the surface or ground, but the mountains work as a good point of reference. Keep in mind, in smoke, mountains can often rise above the smoky haze— skewing the true visibility.

With little rain in the forecast, smoke and air quality will likely remain concerns in the near future. Before strenuous activity outside, a quick check of visibility is a great way to tell if the air is healthy or not.

Haze in the atmosphere doesn't mean the air is unhealthy. On the flip side, there doesn't have to be haze for the atmosphere to be unhealthy. A good resource for information on current air quality is always AirNow.gov.

https://www.ktva.com/story/40947304/air-quality-and-visibility-how-you-can-tell-if-the-air-is-healthy

ANCHORAGE DAILY NEWS

Anchorage

2 rock slides in 2 days - one resulting in serious injury - highlight risks of Seward Highway

Author: **Michelle Theriault Boots** Updated: January 28 Published January 27

An Anchorage apprentice lineman and father remained in critical condition Sunday, suffering from brain injuries sustained when a rock fell from a cliff and smashed his car as he drove to work near Milepost 111 of the Seward Highway early Friday morning.

One day later and a few miles down the road, a rock slide closed lanes of the Seward Highway at Milepost 108.5, according to police. The slide was cleared in a few hours, said Alaska Department of Transportation spokeswoman Shannon McCarthy.

News of the near-fatal event Friday coupled with Saturday's night rockslide has drivers of the only road south out of Anchorage wondering: What are the chances?

State officials say the risk of rock fall to Seward Highway drivers is "relatively small" -- but uncertain.

"It is frustrating to the public and department that the rocks fall unpredictably, and typical measures we take to improve safety (seatbelts, moderate speeds, sober driving) don't decrease risk in this case," McCarthy said.

Rocks raining down from steep cliffs have been a problem between Mileposts 104-114 for years, McCarthy said. This winter has been particularly active: The 7.0 earthquake on Nov. 30 dislodged five dump trucks worth of rock and debris, leading the DOT to advise against traveling down the highway for several days in early December.

There have been other periods of high rock fall activity, McCarthy said, such as in 2014 and 2015 when rocks the "size of small cars" tumbled down and the DOT removed a large boulder near the Potter Weight Station that geologists had tagged as a risk.

McCarthy said she didn't know what specifically caused the Friday or Saturday rock falls. But rocks tend to fall more after a freeze-thaw cycle with rain and wind -- the exact weather we've been having, she said.

The DOT is in the design and planning stages of a multimillion-dollar project to make the corridor between Mileposts 104-114 less prone to the hazards of falling rock. Loose rock will be removed, bigger boulders will be secured with bolts and mesh nets to catch debris will be installed.

https://www.adn.com/alaska-news/anchorage/2019/01/28/rocks-fall-unpredictably-2-rock-slides-in-2-days-1-resulting-in-serious-injury-highlight-risks-of-seward-highway/

ROCKS

In December, DOT started two mitigation projects in the area that had been "in the works for a long time," McCarthy said.

None of that helped Jason Carter, a married apprentice lineman with the IBEW Local 1547 union who was on his way to work early Thursday morning when a large rock tumbled from a cliff just south of McHugh Creek just after 5 a.m., smashing the roof of his Kia Forte as he drove, according to the Anchorage Police Department and an online fundraising site.

Carter, a father of three, suffered brain trauma and was rushed to Providence Alaska Medical Center where he underwent emergency surgery, according to a Facebook page created to keep family and friends up to date on his condition.

He remains in critical condition and under sedation but has shown positive signs like being able to move his legs, according to the page, Jason's Healing.

An online fundraiser for Carter and his family had raised $51,000 as of Sunday.

https://www.adn.com/alaska-news/anchorage/2019/01/28/rocks-fall-unpredictably-2-rock-slides-in-2-days-1-resulting-in-serious-injury-highlight-risks-of-seward-highway/

ANCHORAGE DAILY NEWS

Rocks continue falling on Seward Highway near Anchorage after earthquake

Author: Alex DeMarban Updated: December 10, 2018 Published December 8, 2018

A large rock fell on Craig Maddex's truck on Friday, Nov. 30, during the magnitude 7.0 earthquake. Maddex was driving a double trailer northbound on the Seward Highway near McHugh Creek when the earthquake hit, triggering a rockslide that totaled his truck. (Courtesy Craig Maddex)

A rockfall warning continued early Saturday along a roughly 10-mile section of the Seward Highway just south of Anchorage as officials remained wary of aftershocks triggering rock slides.

The area, between Mileposts 104 and 114, has been the site of at least two close calls related to the 7.0 magnitude quake on Nov. 30, including a boulder that slammed into a semi truck during the quake, nearly killing a man, and rocks that rained down near a woman during an aftershock days later.

https://www.adn.com/alaska-news/2018/12/08/chunk-of-seward-highway-near-anchorage-remains-particularly-dangerous-after-quake-dot-says/

ROCKS

"We don't want people stopping in the area if possible," said Shannon McCarthy, a spokeswoman with the Alaska Department of Transportation and Public Facilities. "If they can drive through that area, that would be the best choice."

McCarthy said ongoing rockfall continued on Friday. As of Saturday morning, there had not been reports of a "significant slide." The warning has been in place since the quake.

"The ditches are getting fairly full," with rocks pushed there by road crews, she said.

Rainfall in the area Saturday added to the dangers of more rock slides, McCarthy said.

"It's particularly active during high wind and heavy rain events," she said. "We're especially concerned about Mileposts 109 and Milepost 114. The whole area is active right now, but those are two critical areas."

A woman collecting water from the cliff-side water pipe at Milepost 109 was nearly struck by cascading rocks earlier in the week, during a large aftershock, McCarthy said.

Commercial truck driver Craig Maddex said he was hauling materials back from Kenai when rocks began thudding onto his tractor and trailers during the quake around Milepost 111, near the parking lot for the McHugh Creek recreational area.

He soon drove through a shower of large rocks that "exploded" his windows and cut off power to the truck, forcing him to stop without power steering. A boulder the size of a recliner sliced through his hood and into his engine, capping the damage and totaling the vehicle.

The impact shoved the dashboard against the steering wheel, cutting his knuckles slightly, his only injuries, he said.

He didn't know at the time an earthquake had struck.

"I definitely had some angel looking over me, or some relative in heaven, another second and I wouldn't still be here," said Maddex, who said he plans to use the recovered boulder as landscaping outside his Eagle River home.

"It was a good thing I took the brunt of it, because I had about five or six little cars behind me," said Maddex, who spoke earlier with KTUU. "If it hadn't been me, I'm sure there would have been some fatalities."

McCarthy said DOT geologists are reviewing the area. Their assessment could lead to recommendations for future roadside work to reduce the risk of rock slides, she said.

https://www.adn.com/alaska-news/2018/12/08/chunk-of-seward-highway-near-anchorage-remains-particularly-dangerous-after-quake-dot-says/

ANCHORAGE DAILY NEWS

2015 Alaska wildfire season now 2nd biggest on record

Author: Asaf Shalev Updated: May 31, 2016 Published August 10, 2015

Alaska has now seen 5.08 million acres burn so far this wildfire season, the second-largest number since records began 76 years ago.

This summer's acreage -- equivalent to nearly 8,000 square miles -- edged out 1957 but will likely fall far short of 2004, the record year when about 6.6 million acres went up in flames, officials say.

Fire official Sam Harrel said that as the dry season in Alaska comes to an end, the chances for lightning to strike and cause new blazes are much lower.

"Things are winding down," said Harrel, spokesperson with the Alaska Fire Service. "We have started our seasonal weather pattern of scattered rains."

He cautioned that Alaska could still see an increase in human-caused fires as the hunting season picks up.

About 238 wildfires continued to burn Monday, with the vast majority being allowed to take their course. Some 97 firefighters are focusing their efforts on protecting the village of Hughes from an advancing blaze along the Koyukuk River.

Alaska has now dispatched firefighting crews to help in Wyoming and northern California.

"The Lower 48 helped us a lot and it's now time to reciprocate," Harrel said. "Our fire season is coming to end as theirs is ratcheting up."

Western Alaska has proved persistently dry even while most of rest of the state has seen some rain. In the Yukon Delta National Wildlife Refuge south of Aniak, for example, deep layers of peat, which usually hold water, are instead smoldering.

The burning of peat, or decayed plant matter accumulated in the soil, causes the release of carbon to the atmosphere, adding to concern about the role of fires in climate change. Another carbon stock scientists are keeping their eyes on as the fire seasons grow longer and more intense is the permafrost that underlies most of Alaska's forested land.

https://www.adn.com/alaska-news/article/2015-alaska-wildfire-season-now-second-biggest-record/2015/08/11/

ANCHORAGE DAILY NEWS

Weather

Evacuation orders eased on Kenai Peninsula, pilot cars gone as rain moderates wildfire

Author: Zaz Hollander Updated: September 3 Published September 3

Traffic stopped at Mile 53 of the Sterling Highway on Sunday, Aug. 18, 2019 after the road was closed in both directions due to the Swan Lake fire. The use of pilot cars was largely lifted Tuesday after rain moderated fire behavior. (Loren Holmes / ADN)

Buy This Photo

Cooler, wet weather has allowed managers to reduce evacuation orders for residents near the Swan Lake fire on the northern Kenai Peninsula.

As much as a half-inch of rain fell over the 162,000-acre fire Monday night, according to an update from the Kenai Peninsula Office of Emergency Management.

https://www.adn.com/alaska-news/weather/2019/09/03/evacuation-orders-eased-on-kenai-peninsula-pilot-cars-gone-as-rain-moderates-wildfire/

The fire had at times threatened the communities of Cooper Landing and Sterling. As of Tuesday morning, more moderate fire behavior led officials to downgrade Cooper Landing to a less-urgent "ready" evacuation status. Evacuation orders were lifted entirely for Sterling because the fire's progress in that direction was halted, officials said.

Officials also stopped using pilot cars along miles of the Sterling Highway after conditions required them since mid-August, according to Jessica Borden, at the borough's fire call center. Highway construction is resuming, and pilot cars and flaggers will be used in those areas.

Cooper Landing School will reopen on Wednesday, said Pegge Erkeneff, Kenai Peninsula Borough School District spokeswoman. Fourteen students attend the K-12 school that had closed on Aug. 27.

Also on Wednesday, a portion of the Kenai River will reopen to boaters, said a statement from state and federal agencies. The river will be opened daily from 6 a.m. to 6 p.m. from the Cooper Landing state boat launch to Sportsman's Landing. The river remains closed to boating from Sportsman's Landing to Skilak Lake.

An emergency burn closure issued two weeks ago for state, private and municipal lands in the Kenai Peninsula and Matanuska-Susitna boroughs will be lifted at 8 a.m. Wednesday, announced the state Department of Natural Resources. Campfires and charcoal grills will again be allowed, but people should remain careful, State Forester Chris Maisch said in a statement.

"Even with the burn closure rescinded, people still need to be extremely careful with any kind of burning," he said. "While the rain over the weekend was enough to dampen fine surface fuels, it was not substantial enough to penetrate down to the deeper layers of the duff that remain extremely dry."

On the Peninsula, Skilak Lake Road remained closed Tuesday from Upper Skilak Lake Road to Jim's Landing.

[This August was Anchorage's warmest on record as hot air stalled over Southcentral Alaska]

Occasional light afternoon showers are possible over the next several days and the next chance for significant precipitation will be this weekend, managers say, but vegetation that could fuel the fire remains dry despite the recent moisture.

Community meetings were scheduled for 6 p.m. Tuesday at the Cooper Landing School and the Sterling Community Center.

https://www.adn.com/alaska-news/weather/2019/09/03/evacuation-orders-eased-on-kenai-peninsula-pilot-cars-gone-as-rain-moderates-wildfire/

Appendix I

Human Geographical Factors

Ravn Air and UAA launch first paid pilot training program

By Kristen Durand | Posted: Thu 3:58 PM, Apr 18, 2019 | Updated: Sat 7:36 PM, Apr 20, 2019

ANCHORAGE (KTUU) - Alaskans hoping to become professional pilots can now go to school for it while getting paid. It's a new internship program offered by UAA in partnership with Ravn Air aimed to bolster recruitment in a field that's in high demand in the state.

It's the first aviation degree plus paid pilot internship training program in the nation. One that allows students to simultaneously complete their aviation degree, while getting jobs, and getting paid as regional airline pilots.

"First-year pay is about $36,000 a year, plus we have a $15,000 annual retention bonus. So the first year would be about $51 thousand, says Deke Abbott, Senior Vice President of Flight Operations for Ravn Air Group. "They will be in school earning that kind of money while they're still a second-semester senior, or second semester of their associate's degree."

Students in their final semester will get to put their skills to practical use as full-time Ravn second-in-command pilots.

"They're issued their degree, and they stay right on the job, said Abbott. "They keep right on moving up the seniority list and flying. There's no break in service. There's no break in between graduating and finding a job type (of) arrangement."

It's a job that's in high demand. According to the FAA, over the last three decades, the number of pilots has decreased by 30 percent.

"All of the projections are that the aviation industry is in dire need of pilots, mechanics, all aviation workers, so this

https://www.ktuu.com/content/news/Ravn-Air-and-UAA-launch-first-paid-pilot-training-program-508779741.html

TRANSPORTATION

was just another opportunity to entice students to basically see what the goal was," said Paul Herrick, Director of Aviation Technology Division at UAA. "It lets them see the finish line. Here's where you're headed, and letting them see that as early as possible by going to work for Ravn."

President and CEO of Ravn Air Group, Dave Pflieger says this partnership is all about creating more jobs for Alaskans, in Alaska.

"It's a win-win for everyone involved," Pflieger said. "First and foremost, the student, secondly the university, and third, the airline. So by doing this in the state of Alaska, with Alaskans, our hope and goal is to get students straight out of UAA into an airline job, in an airline that's based in flying in the state."

The university says if it sees enough interest early on, the program could start as soon as the Fall 2019 semester.

https://www.ktuu.com/content/news/Ravn-Air-and-UAA-launch-first-paid-pilot-training-program-508779741.html

Port of AK to cost almost $2 billion to repair and replace

By Rebecca Palsha | Posted: Mon 5:13 PM, Jan 28, 2019 | Updated: Mon 8:04 PM, Jan 28, 2019

ANCHORAGE (KTUU) - The price to upgrade, replace and fix the aging Port of Alaska has now grown to almost $2 billion.

The Port is vital to the state. It handles more than 3.5 million tons of food, building supplies and all things that make life enjoyable and workable for Alaskans. It is also designated as a strategic seaport for the Department of Defense.

The new price tag, from CH2M Hill, which is now owned by Jacobs Engineering, comes as a surprise the Anchorage Assembly as well as the mayor's office.

"It's certainly an uncomfortable place and what we ultimately want folks to know is that we don't have any particular interest in building a $2 billion, all-in project," city manager Bill Falsey said. "We would like this to be the least expensive port that can meet our needs."

The Port of Alaska is owned and operated by the Municipality of Anchorage, but it serves the entire state. That banana you had for breakfast? It came through the port.

Corrosion is a lot of the problem, and the port is not up to the modern-day standards for ships, which are much larger today than when the port was first constructed.

Another issue facing the port is the failed port expansion that cost millions of dollars and ended up in litigation. The expansion started in 2003, but was quickly stopped after major problems were discovered. What that means is that the expansion has to be removed, costing about $300 million, Steve Ribuffo, the Port director, has previously

https://www.ktuu.com/content/news/Port-of-Alaska-expected-to-cost-almost-2-billion-to-repair-and-replace--504997701.html

said.

Falsey says the recent increases can be blamed on several issues.

"Some amount is due to the assumption about the costs of dredging going up because they thought something would be performed by the Corps of Engineers. The Corps of Engineers made some decisions that increased the cost. Some amount was because of the environmental compliance requirement changed, some amount was because of steel tariffs," Falsey said, "still more was because some of the original assumptions about how much it would cost to mobilize equipment from the Lower 48 proved not to be accurate."

So what happens now?

The city wants the public's help looking through the port budget looking for ways to cut the budget.

Assembly member Chris Constant is the co-chair of the enterprise and utilities committee. It's within that working group that the public is asked to comb through the Port budget to find ways to cut the budget.

"We have to be responsible for ourselves so we have to be very smart and look closely at the plans and proposals to make sure we're buying what we need and we're not just writing a blank check for the future," Constant said.

The port would be fixed during several phases. The first one that's ready to start construction is the petroleum-cement terminal, which would be ready to be built in 2020 or 2021. The price for that terminal alone went from $124 million to $223 million. To pay for it, if it's approved, a 3-cent tariff would be added to a gallon of gasoline. That's up from a fraction of a percent now.

Falsey says the price isn't set in stone just yet. He says the city, and the public, will be combing through the proposed budget to find a way to make it less expensive.

https://www.ktuu.com/content/news/Port-of-Alaska-expected-to-cost-almost-2-billion-to-repair-and-replace--504997701.html

ANCHORAGE DAILY NEWS

Weather

Alaska Railroad cancels passenger service between Anchorage and Denali due to wildfire

Author: Annie Zak Updated: August 19 Published August 19

Alaska Railroad stock Friday, June 3, 2016. (Sarah Bell / ADN)

The Alaska Railroad has canceled all passenger service between Anchorage and Denali National Park and Preserve due to the wildfire burning north of Willow, the corporation announced Monday.

The McKinley fire jumped the tracks Saturday night near railroad Mile 205 between Willow and Talkeetna and continued to burn Monday on both sides, the railroad said in an emailed statement.

https://www.adn.com/alaska-news/2019/08/19/alaska-railroad-cancels-passenger-service-between-anchorage-and-denali-due-to-wildfire/

TRANSPORTATION

"Numerous burned trees have fallen on the tracks and crews are in the process of removing downed trees and a monitoring the situation," the railroad wrote.

About 200 railroad passengers were transported by motor coach from Anchorage to Denali and Talkeetna on Sunday, and 140 southbound passengers from Fairbanks, Denali and Talkeetna were rerouted to Fairbanks by motor coach after "several hours of delay" because of the Parks Highway closure.

More passengers are expected to travel both directions by motor coach on Monday. The railroad expects to use motor coach service through Tuesday.

The Parks Highway reopened Monday morning to one lane with a pilot car leading vehicles through a 28-mile stretch, but there were still significant delays and drivers were urged to avoid the area, authorities said.

https://www.adn.com/alaska-news/2019/08/19/alaska-railroad-cancels-passenger-service-between-anchorage-and-denali-due-to-wildfire/

MTA officials say new high-speed internet project will expand connectivity, increase internet speeds across Alaska

By Beth Verge | Posted: Wed 9:11 AM, May 01, 2019 | Updated: Wed 8:13 PM, May 01, 2019

ANCHORAGE (KTUU) - A subsidiary of the Matanuska Telephone Association, MTA Fiber Holdings, has begun construction on what officials say is the first and only terrestrial fiber line from Alaska to the contiguous United States, expanding connectivity and expected to exponentially increase internet speeds across the state.

"Deploying hundreds of miles of new fiber optic cable throughout our region," said MTA CEO Michael Burke, "in order to provide broadband to thousands of people that don't have it right now."

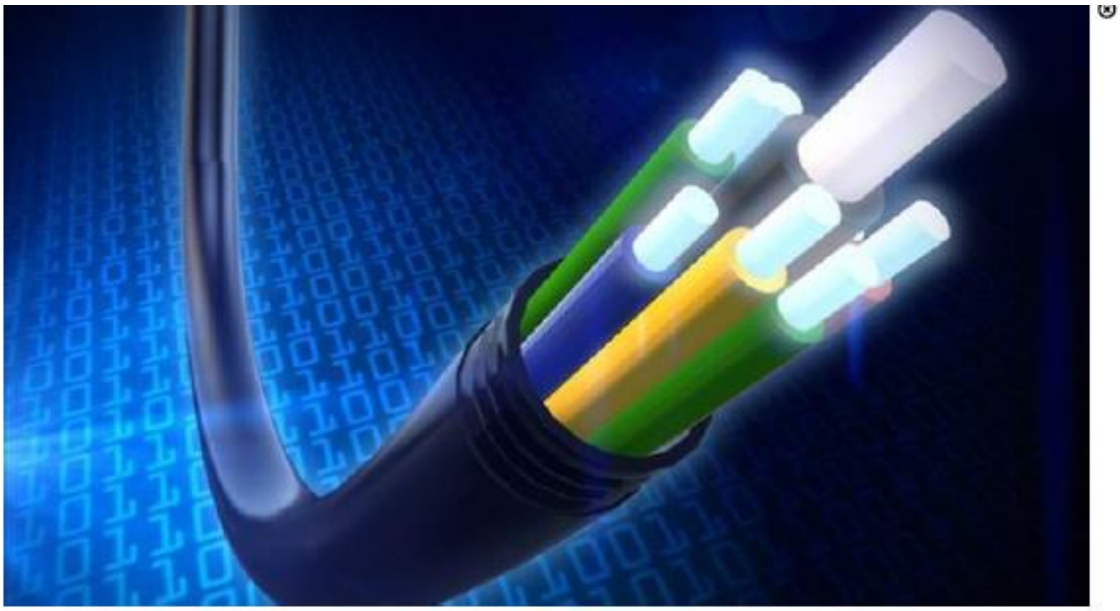
MTA, which was established in 1953 and is locally owned and operated, has said that AlCan ONE - as the line has been named - will establish a "secure and reliable fiber connection to any point in the contiguous United States [...] providing Alaska with a robust internet transport connection for decades to come."

Fiber optic internet lines are not entirely new to Alaska - though access is significantly lesser in the Last Frontier as compared to the Lower 48 - but the installation is different, as is the path to a centralized source. The cable in the MTA project is indeed similar to ones already operated by companies such as GCI and Alaska Communications. Their lines, however, are in large part submarine, laid beneath the Gulf of Alaska. Then you have the ever-expensive satellite operations, and some wireless connections as well. The land-based fiber optic line that MTA is in the process of installing will be a few feet underground.

"It's a buried cable that's going to go essentially along the Alaska-Canada Highway," Burke said. "We'll have ability to breakout bandwidth to any of those communities along that route."

https://www.ktuu.com/content/news/Officials-New-terrestrial-fiber-line-to-expand-connectivity-increase-internet-speeds-509323521.html

TECHNOLOGY



MGN Online

AlCan ONE will run from North Pole, Alaska, and extend through Canada, and end at a main hub in Seattle, Washington. Initially, the network will have a capacity of more than 100 terabits, or 12,500 gigabytes, per second. A firm representing MTA said that figure could rise, as the allowance "can be expanded and increased in the future as demand grows."

As part of what officials called an "extremely large impact on Alaska," MTA said the payoff will be more accessibility and connectivity for subscribers and partner subscribers, though they could not provide details as to cost savings versus methods such as satellite services. A company representative also said that the contracts the company has for the network are subject to non-disclosure - for competitive reasons - and thus the cost of the project is unavailable public dissemination.

Officials added that the construction phase will add dozens of jobs to the Alaska market, and while MTA will not necessarily serve all of the rural communities in the area of AlCan ONE, the company will be able to provide service to other companies that do reach some of those populations.

The plan is to have the project completed by mid-2020, likely sometime around June.

https://www.ktuu.com/content/news/Officials-New-terrestrial-fiber-line-to-expand-connectivity-increase-internet-speeds-509323521.html

Alaska expects worker shortage as energy projects ramp up

By Associated Press | Posted: Thu 9:25 PM, Nov 01, 2018

ANCHORAGE, Alaska (AP) — Alaska workforce development officials say the state could soon face a labor shortage in some of its key industries.

The Alaska Journal of Commerce reports several major projects are gearing up in the oil, gas and construction sectors, requiring thousands of workers in the next few years.

The state lost more than 10,000 jobs since its recession began in 2015, with the majority of those job losses occurring in oil, gas and construction.

Heidi Drygas, commissioner for the state Department of Labor and Workforce Development, says she is already hearing from some union hall leaders that they are starting to run out of skilled laborers.

Drygas says the state needs to encourage young people to look at careers in the trades and invest in training programs.

https://www.ktuu.com/content/news/Alaska-expects-worker-shortage-as-energy-projects-ramp-up-499373401.html

BP pullout could affect state revenue

By Sean Maguire | Posted: Wed 7:12 PM, Aug 28, 2019 | Updated: Wed 8:42 PM, Aug 28, 2019

ANCHORAGE (KTUU) - Same oil field, different tax structure.

When Hilcorp starts operating Prudhoe Bay, the State of Alaska could miss out on tens of millions of dollars of revenue as the company will not pay the corporate net income tax. Oil industry representatives say increasing production could bridge that fiscal gap.

Hilcorp, a privately owned company, is an S Corporation, meaning it is exempt from paying the tax. Prior to 1980 when the Alaska Individual Income Tax was in place, private business owners paid their company's taxes at the individual rate as pass-through income.

When the individual income tax was eliminated, taxing pass-through income was also eliminated. Former Democratic Rep. Les Gara introduced legislation in 2017 that would have closed that so-called loophole for high profit companies.

As a publicly traded company, BP Alaska is classified as a C-Corporation, meaning it pays the corporate net income tax annually. How much it pays is confidential information that the Department of Revenue will not disclose publicly.

Meg Baldino, a spokesperson for BP Alaska, would also not disclose how much the company paid under the corporate net income tax but she did say that overall, "BP Alaska paid $804 million in taxes and royalties to the State of Alaska in 2018."

According to Gara's best estimate, the company is likely paying between $25-$60 million per year to the state under the corporate net income tax.

https://www.ktuu.com/content/news/Hilcorp-buying-BP-Alaska-could-see-state-revenue-lost-but-increased-production-could-help-558636141.html

Alaska's population falls for the second year in a row

By Tracy Sinclare | Posted: Thu 8:05 PM, Jan 10, 2019

ANCHORAGE (KTUU) - Alaska's population fell by 1,608 people between July 2017 and July 2018, according to the Alaska Department of Labor and Workforce Development. This is the second year in a row there has been a decline in total population.

As of July 2018, Alaska's population is about 736,000 — down from 740,000 in 2016 according to state demographer Eddie Hunsinger.

"It's been two years of population losses and about six years of more people moving out of that state than to the state," Hunsinger told KTUU Thursday.

The change in population is calculated by looking at the "natural increase" versus "net migration."

Net migration is the number of people who moved into the state minus the number of people who left the state during that same period. Alaska's net migration between 2017 and 2018 was -7,577 people.

Natural increase is the number of births minus the number of deaths. Alaska's net increase add 5,969 people, which leaves the overall loss of people at 1,608.

Of the 29 boroughs and census areas in Alaska, 18 of them lost population. The Municipality of Anchorage fell the most with a decline in population of 2,386.

"Anchorage saw it's biggest population decline since the 1980s — it dropped down to about 295,000 people after peaking at 321,000 in 2013," Hunsinger said.

The Matanuska-Susitna Borough gained the most people with an increase of 1,355.

Alaska's older population — 65 years and older — grew more than five percent, while the under-18 and 18 to 64 age groups each declined 0.9 percent.

https://www.ktuu.com/content/news/Alaskas-population-falls-for-the-second-year-in-a-row-504175451.html

American Airlines adding three new routes to Alaska, including first-time flights to Fairbanks

Aero Pixels / Flickr / CC by 2.0

By Gilbert Cordova | Posted: Thu 6:48 AM, Aug 29, 2019

ANCHORAGE (KTUU) - American Airlines is introducing three new routes to Alaska, including service to Fairbanks (FAI), a new destination for customers.

American is providing two new ways to get to Alaska's second-largest city, Fairbanks, through Dallas-Fort Worth (DFW) and Chicago (ORD). The new routes will serve local and connecting customers who are looking to explore Denali National Park, check out caribou or learn about the unique glaciers.

American will also introduce a new service between ORD and Anchorage (ANC).

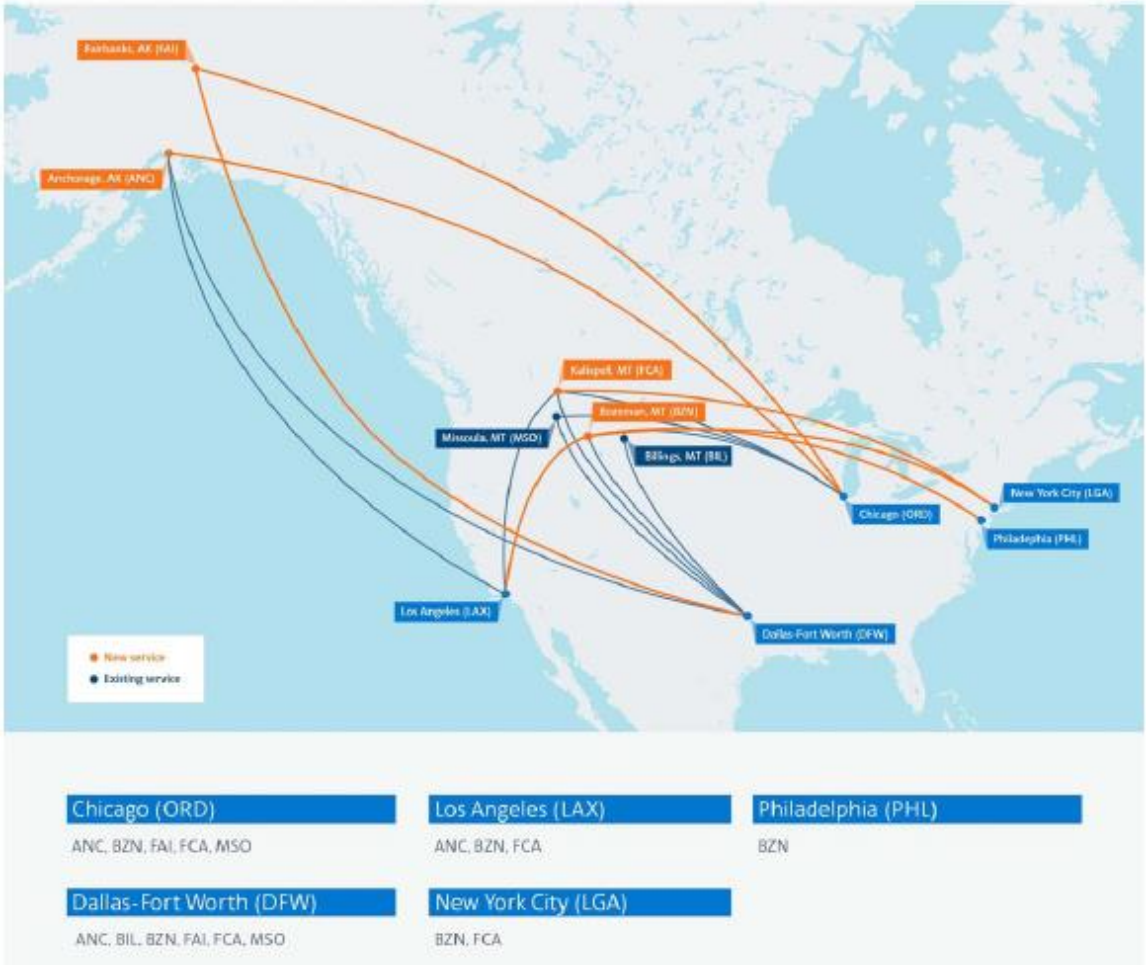
Flights will be available for purchase Sept. 1.

https://www.ktuu.com/content/news/American-Airlines-adding-three-new-routes-to-Alaska-including-first-time-flights-to-Fairbanks-558690231.html

The flights from Dallas-Fort Worth to Fairbanks will be daily starting May 7, 2020, and go through Oct. 6, 2020.

The flights from Chicago to either Fairbanks or Anchorage will be daily starting May 7, 2020, and go through Oct. 6, 2020.

American will offer 17 routes to Montana and Alaska next summer.



https://www.ktuu.com/content/news/American-Airlines-adding-three-new-routes-to-Alaska-including-first-time-flights-to-Fairbanks-558690231.html

Divided Alaska Legislature convenes session in 2 cities

Alaska Legislature coverage App Nav image

By Associated Press | Posted: Mon 8:16 AM, Jul 08, 2019 | Updated: Mon 4:31 PM, Jul 08, 2019

ANCHORAGE, (AP) - The Alaska Legislature is scheduled to begin a special session later Monday, but divided lawmakers cannot agree on the location. So, it appears they will go to different cities.

The main issue for the session is to determine the amount of this year's oil wealth check. Gov. Mike Dunleavy favors a full payout, about $3,000 per person, but some lawmakers prefer smaller checks as the state deals with a budget deficit.

Lawmakers couldn't decide the payout amount in five months of work in Juneau. Dunleavy called lawmakers into a second special session, in Wasilla.

However, a majority of lawmakers say they will convene Monday in Juneau while a smaller group says they are going to Wasilla.

Once the session starts, lawmakers also have five days to override Dunleavy's budget vetoes.

https://www.ktuu.com/content/news/Divided-Alaska-Legislature-convenes-session-in-2-cities-512418282.html

Kenai River fishing is slow now, but runs should come in soon

By Matt Leseman | Posted: Fri 5:06 AM, Jul 19, 2019 | Updated: Fri 6:50 AM, Jul 19, 2019

ANCHORAGE, Alaska (KTUU) Matt Miller, Alaska Department of Fish and Game Region II Management Coordinator, says that fishing on the Kenai is a bit slow right now.

"Conditions on the Kenai River right now are pretty tough," Miller says. "The water's pretty high, and there's a lot of debris in the water, so it's making it tough to find the fish and they're not seeing it."

When you compare this year's return numbers to previous years, it's not very surprising that we haven't seen large movements of sockeye and chinooks yet. Fish and Game say previous patterns suggest that this and next weekend will have a much higher number of reds and kings moving through.

"This coming weekend will probably be a pretty big fishery," Miller says. "This and next week will be a really popular time to go down and participate in that Kenai River personal use fishery going for sockeye salmon."

If you are planning on going fishing this weekend, note the limits on kings and reds. Kings must be caught without bait and are limited to one of any size from the mouth of the Kenai to Slikok Creek or 36 inches or less past there.

The limit for reds on the Kenai is three per day, six in possession.

King season ends on the Kenai after July 31, but reds will continue to run through early to mid-August.

https://www.ktuu.com/content/news/Kenai-River-fishing-is-slow-now-but-runs-should-come-in-soon-512929901.html

Unit 13 opened to any caribou for permit-holders

Denali_ Caribou_Bill Stannard 1-18-18

Posted: Wed 2:44 PM, Jul 31, 2019

ANCHORAGE (KTUU) - Managers for ADF&G say that this mild winter was good for caribou – good enough that they are loosening restrictions to any caribou instead of just bulls.

Managers say that the parturition rates (the rate of cows giving birth to calves) was high this year, resulting in an estimated 17,000 calves in a herd of about 51,000 total caribou.

The goal of managers is to keep the population between 35,000 and 45,000 – otherwise the herd risks overgrazing, which can result in population crashes.

The Nelchina hunt opens on August 10 in Unit 13, which covers a large area between the Talkeetna Mountains and the Alaska Range.

https://www.ktuu.com/content/news/Unit-13-opened-to-any-caribou-513462411.html

Moose hunter attacked by a bear, the animal was shot & killed

By Gilbert Cordova | Posted: Mon 10:04 AM, Sep 09, 2019

ANCHORAGE (KTUU) - Alaska State Troopers say a moose hunter is seriously hurt after being attacked by a bear in the Eureka and Gunsight Mountain area Friday.

Troopers say the two hunters surprised a sow brown bear with two cubs. The sow attacked one of the hunters.

The second hunter was able to shoot the sow as the hunters self-evacuated to a cabin where the injured hunter was transported by Lifemed Helo to an Anchorage hospital.

Other hunters in the area were able to confirm the sow was killed.

https://www.ktuu.com/content/news/Moose-hunter-attacked-by-a-bear-the-animal-was-shot--killed-559846601.html

49th Annual Native Youth Olympics kicks off in Anchorage

By Grant Robinson | Posted: Thu 8:25 PM, Apr 25, 2019

ANCHORAGE (KTUU) — More than 450 student athletes from across Alaska and parts of Canada traveled to Anchorage this week to compete in the 49th annual Native Olympic Games.

"This is really important to native people," said Stanley Riley, a coach at Barrow High School. "These games that we compete in made the difference in life and death for thousands of years."

Each of the traditional games translates to skills foundational to rural subsistence native cultures.

"Eskimo stick pull is just like pulling a seal up on your boat," Riley said. "Scissor broad jump is like running across ice, so these are events that we did long before the modern era."

For some competitors, the games become a lifelong passion.

Nicole Johnston first competed as a 7th grade student and now, she's the head official of NYO.

"I have grown tremendously in so many different ways and I have created and built so many friendships over the years," Johnston said. "I'm just so happy to be a part of the success of traditional native games and watching kids and coaches and athletes just really embrace what our games are all about."

Although only a few dozen athletes will leave Anchorage with a medal, the games offer more than that.

"I hope they walk away with the experience, meeting all these new amazing athletes and I hope they walk away just a better human being," Riley said.

The games continue Friday and Saturday at the Alaska Airlines Center beginning at 10 a.m.

https://www.ktuu.com/content/news/49th-Annual-Native-Youth-Olympics-kicks-off-in-Anchorage-509091942.html

World Eskimo Indian Olympics underway in Fairbanks

By Patrick Enslow | Posted: Wed 11:00 PM, Jul 17, 2019 | Updated: Thu 5:14 AM, Jul 18, 2019

Anchorage (KTUU) - Survival is the name of the game at the 2019 World Eskimo Indian Olympics. Since 1961 athletes from around the world have made their way to Fairbanks to celebrate Native Alaskan culture through sport. KTUU's Patrick Enslow has a recap from the opening day of this year's games.

https://www.ktuu.com/content/sports/World-Eskimo-Indian-Olympics-begins-Fairbanks-512875111.html

Homeless or Homesteading: Can Anchorage solve its illegal camping problem in city parks?

By Jill Burke | Posted: Tue 9:56 PM, May 22, 2018 | Updated: Tue 10:11 PM, May 22, 2018

Anchorage, KTUU — City dwellers fed up with tent cities alongside Anchorage's trail system and greenbelts say the campers are acting more like homesteaders than people who are homeless – claiming space as their own, running people off, attracting crime, and creating unsightly, unsanitary messes. A renewed push is underway, to return enjoyment of the city's public spaces, to the public.

Homelessness in Anchorage is not a new issue. For years it's been a nomadic phenomenon. Bust up a camp in one part of town, a new one is destined to turn up somewhere else. In recent years, the city has worked to get its most vulnerable residents – drug addicts, the disabled, the mentally ill – off the streets and into housing.

Yet, the problem of homelessness as a blight on parks and neighborhoods continues. And it may be because those who are left represent a group of individuals who are not acutely vulnerable, but who may need some other type of intervention to get them off the streets.

"You can't have a safe existence with people out in the community who are camping. That can't happen," Nancy Burke, the city's Homeless and Housing Coordinator, said in an interview Tuesday.

While hundreds of individuals have been moved into housing, many still live outdoors, whether by choice or by circumstance. The number of people living in shelters, on the streets, and in illegal camps always goes up in the summer. According to Burke, in January 2018, the city counted 807 people without housing, while in August of 2017, 1,263 were counted as homeless.

https://www.ktuu.com/content/news/Homeless-or-Homesteading-Can-Anchorage-solve-its-illegal-camping-problem-in-city-parks--483416601.html

Tools at an illegal camp along the Chester Creek trail on May 22, 2018.

Retired Superior Court Judge Stephanie Rhoades lives near the Chester Creek Greenbelt Park in midtown. She left the bench last September, ending a 25-year career spent helping people who needed help get on the right track. She founded the city's wellness and therapeutic courts and has seen first-hand what cognitive disabilities or addiction impacts have on a person's decision making and ability to make good decisions.

On a walk of the trails Tuesday, weaving between camps in the woods, Rhoades said what's going on in the park near her home has more to do with crime than it does with homelessness.

"There is a belligerence in the folks that are living here. If you walk into a camp, the general response is 'What are you doing on my property?'" Rhoades said.

In addition to living in the park illegally, "they steal bikes from surrounding areas and chop them up or sell the components, or they make one bike that's resalable for a good amount. Clothing, coffee makers, computers – there's just an endless supply of things people have gotten from other people's homes," Rhoades said.

The camps KTUU visited had an eclectic mix of use of space. Some areas were tidy and clean, staked out with woven wood fences, pallet board subfloor, and lawn chairs. Some had generators and propane tanks. Others were littered with clothing, giant teddy bears, soda and liquor bottles, needles, garbage bags, paper products, part of a Shark brand vacuum cleaner. Many had bicycle buggies – the kind used for kids – and bicycles. Tools and broken down bicycles, bicycle parts and coils of piping – the kind you'd find in the walls of a home – were also visible, as were grills, and the charred remains of open pit fires.

One group of young adults we encountered declined to speak on camera, saying they'd only do so if they were paid $5 or if we fed them doughnuts. Several minutes later, another man came riding up on a bicycle, upset that the group had gotten into his belongings, accusing at least one person of wearing his wife's clothes.

https://www.ktuu.com/content/news/Homeless-or-Homesteading-Can-Anchorage-solve-its-illegal-camping-problem-in-city-parks--483416601.html

A woman named Pam Hildebrandt did speak with us. She said she was only visiting the camp to help clean up, and that she was known as "mom" or "sister" to many, as she takes on the role of looking out for people. According to Hildebrandt, who said her husband works a construction job and donates to charity when he can, all most people want is a little help getting back on their feet.

"It's not really a lifestyle because that's the misconception with them - that they choose this. they don't choose this. it's that they don't have anybody to help them," said Hildebrandt, who lives between camps and plans to for the rest of the summer, allowing her and her husband to save money for an apartment later in the year.

As for the accusations about stolen bikes? Hildebrandt said neighbors have misunderstood what's going on. "They fix them for people that need it, just like a free service. It's just a way to help your neighbor," she said, explaining that the campers are basically doing pro bono bike maintenance.

Rhoades is convinced nothing could be further from the truth and said the evidence – stacks of high end bikes and children's bikes in various states of deconstruction, bins labeled "bike parts" and a dedicated work bench for bike maintenance – reveal what's really going on: a chop shop.

"They are very ordered in their thinking. They have a distinct plan for attack and stealing bicycles. they know how to make them serviceable and saleable. They have all the skills of somebody who would work in retail," Rhoades said.

"Most of them don't want to be there," said Lt. Jack Carson, Commander of Community Action Policing for the Anchorage Police Department, in a late afternoon interview. He strongly disagrees with the idea that individuals in the camps aren't facing significant addiction or mental health issues. He views the nearby thefts through the context of those epidemics.

The people in the homeless camps "don't have anything, they don't work. They have needs and that's how they survive," he said. Panhandling, thefts, the bicycle rings, all go to support either the drug habits and basic living needs of opiate addicts, or the daily living needs of the mentally ill, he said.

Enforcement is difficult. When officers go through camps, they'll check found objects like bikes and sometimes, firearms, for serial numbers. But often, items reported stolen aren't connected to a serial number, and a police officer then can't prove it's stolen. "Just because we think it's stolen doesn't give us the right to seize it," Carson said.

https://www.ktuu.com/content/news/Homeless-or-Homesteading-Can-Anchorage-solve-its-illegal-camping-problem-in-city-parks--483416601.html

Carson said the crime reform known as Senate Bill 91 has had unintended consequences, letting people out of jail with promises of treatment on the outside, only to have individuals run into a lack of out-patient and in-patient treatment options. Ticketing or issuing fines isn't helpful, as individuals in the camps tend to ignore the citations and never paying the fines, defeating the purpose of deterrence, he said.

In July, the city will receive $150,000 dollars to help manage the homeless problem, money secured by Anchorage Assemblyman Christopher Constant. Rhoades is on a mission to make sure it's well spent.

"I think it is abundantly clear when you look at these sites, when you talk to the people in them, when you have the circumstantial evidence to the things that are in these sites, that they are very capable, very industrious, mentally organized people who are more than capable of competitive work," Rhoades said.

"The concern that's being raised by the neighborhood, that's what we're also observing. And so, we are attempting to address our camp notification process differently this year," Burke, the city's homeless coordinator, said.

The camp notification process is a mechanism on the home page of the municipal website that allows users to report a homeless camp. This summer, Burke is hoping for a more strategic approach, one that will look at the big picture and target larger clusters of camps in the most severe problem areas.

"If all we do is give lawful notices followed up by abatement's by Parks and Rec and then we don't prevent the cycle back, we're going to get all new encroachments and we're going to be starting all over again. We will be throwing good money after bad if we simply do the approach of tent by tent whack-a-mole," Rhoades said.

"We know if we just move all of those people from Chester Creek, they'll go to another location, and then we start all over again. What we are trying to do is place the interventions at the same time we do these areas so that we move people out of this area and in to housing," Burke said.

This summer, the city will double camp site clean-up teams, and work to connect housing-resistant individuals to social service resources. This summer the city will also have 120 options for housing for different types of people, Burke said.

Rhoades and others want the parks and trails reclaimed for the public as safe places to recreate with families.

While her approach is to get the people out of the park, Charles "Hans" Thompson, another midtown resident and longtime Alaskan, is interested in other methods. Like creating public trails through the main camp sites or thinning out the trees that create privacy and concealment. With transparency, campers are less likely to linger, Thompson said.

Both Rhoades and Thompson had scheduled appearances before the Anchorage Assembly Tuesday evening to propose their ideas.

Ultimately, she, Thompson, and concerned citizens from other neighborhoods are seeking the same outcome: reclaiming the city's parks and trails as safe places for Anchorage's families.

Rhoades wants a longer term homeless-to-housing plan, more housing options, and more accountability, by everyone. She wants to make sure the $150,000 is money well invested, not wasted.

https://www.ktuu.com/content/news/Homeless-or-Homesteading-Can-Anchorage-solve-its-illegal-camping-problem-in-city-parks--483416601.html

Leaving Alaska: Thousands migrate for a strong Lower 48 economy

By Sean Maguire | Posted: Wed 9:00 PM, Aug 14, 2019

ANCHORAGE (KTUU) According to a study from the Alaska Department of Labor, when the economy is strong in the Lower 48 and unemployment is low, more people leave Alaska in search of opportunity.

"What we found over the last five years was a trend where every year without fail, we're seeing 16,000 people move from the Lower 48 to Anchorage and about 20,000 people a year moving to the Lower 48," said Bill Popp, president and CEO of the Anchorage Development Corp. "So that's a net loss of about 20,000 from Anchorage to the Lower 48 over the past five years."

The high out-migration for Anchorage is mirrored in figures for the rest of the state. The past five years have seen increasing numbers of Alaska residents leave the state as the national unemployment rate dropped.

"Alaska's continuous net migration loss makes sense given that the nation's economic expansion has hit a record length and the U.S. unemployment rate has fallen to a near 50-year low," read a report written by Neal Fried, a State of Alaska economist.

"A smaller population means a smaller marketplace and less spending in our community," said Popp, who continued to describe that a declining population hurts local businesses and entrepreneurs.

The AEDC is now looking at improving quality of life indicators such as a strong university district, strong arts sector, accessible parks and trails as a way to attract and retain talent.

Paula Bradison, president of Alaska Executive Search, said the recruitment company had seen a rise in job orders but difficulty hiring in some sectors, particularly for accountants, who are said to be in demand.

https://www.ktuu.com/content/news/Leaving-Alaska-Thousands-emigrate-for-a-strong-Lower-48-economy-543466731.html

"Absolutely," said Bradison to the question of whether a strong economy in the Lower 48 is pulling people away. Ongoing state budget turmoil is also said to be making some small and midsize businesses nervous.

"What I hear from the employers is uncertainty, even from our strongest legacy businesses, this is the first time in my career that I've heard this level of uncertainty," Bradison said. The consequence is that some businesses are nervous about making a hire and talented people are being snapped up out of state.

In late July, the AEDC released a scathing three-year outlook for Anchorage, warning that budget instability and the governor's vetoes would worsen the recession and spark higher out-migration.

The report suggested that if some of the vetoes are restored that those population losses would be mitigated.

There is however a bright spot for Anchorage. Barbara Ramsey, an associate broker at ReMax Dynamic Properties, said the property market appeared to be relatively balanced. She described falling oil prices, budget uncertainty and high unemployment as "speed bumps" but said that the property market could weather the storm.

The number of homes being built or on the market is a major difference from 1986 when the economy tanked and people left the state en masse. "We had a lot of inventory on the market, that created a nosedive, created a car crash," Ramsey said.

"While no single landlord's vacancy is an indicator of the whole market, and we offer a different product than other landlords, we currently are still seeing a healthy demand for our rentals," read a prepared statement from the Cook Inlet Housing Authority. "However, we are concerned that current budget decisions could begin to negatively affect demand in the not so distant future for our region and across the state."

https://www.ktuu.com/content/news/Leaving-Alaska-Thousands-emigrate-for-a-strong-Lower-48-economy-543466731.html

New state pumpkin record!

Posted: Tue 2:54 PM, Aug 27, 2019 | Updated: Tue 3:01 PM, Aug 27, 2019

Dale Marshall, last year's state pumpkin champion outdid himself this year with a 2,051 lbs pumpkin that was weighed in at the Alaska State Fair in Palmer today.

His record from last year: 1,471.5. That's over a 500 lbs increase.

But he's still got a ways to go for the world record, currently by a Belgian man, of 2,624 lbs.

https://www.ktuu.com/content/news/New-pumpkin-state-record-558489281.html

Evangelists win right to proselytize in city park

By Richard Mauer | Posted: Tue 4:10 PM, Dec 11, 2018 | Updated: Tue 4:30 PM, Dec 11, 2018

ANCHORAGE (KTUU) — A father-daughter evangelical team has won a settlement with the city allowing them to distribute religious leaflets at the park used by the Forest Fair in Girdwood.

But whether they will be allowed to proselytize at a future event will be up to Forest Fair itself, said the city attorney who worked on the case.

Forest Fair officials didn't respond to messages left on their website and on Facebook. The 2018 Fair, held July 6-8, was the 43rd such event.

Pamela Weiss, a city attorney, said the settlement was a "narrow agreement." The Fair, or any organization, could still control city property like a park when it has a permit, she said. Only a government entity like the Municipality, and not a private nonprofit like the Fair, can be sued for violating someone's First Amendment rights, Weiss said.

David Grisham, of Anchorage, and his daughter, Tina Watson of Dallas, filed the lawsuit against the city after they were barred from proselytizing and threatened with trespassing arrests at the 2017 Fair. They said in their lawsuit that while they sometimes preach and walk around with signs, they only tried to hand out leaflets and talk with fairgoers.

"On July 8, 2017, my dad, my nephew Airric, and I drove to the park to share the Gospel with Fair attendees, intending to pass out tracts and visit with people," Watson said in a sworn statement filed in the case. "We didn't bring any signs, and I didn't plan to preach."

Evangelists win rights to proselytize in city park. (2018, December 11). KTUU News. Retrieved from https://www.ktuu.com/content/news/Evangelists-win-right-to-proselytize-in-city-park-502514021.html

RELIGION

In their lawsuit, brought by the Bible-Belt public interest law firm Center for Religious Expression of Memphis, Tennessee, they said the city violated their constitutional right to religion. They asserted the Fair was a public event at a public park.

Memphis attorney Nathan Kellum of the Center for Religious Expression didn't return a call to his office.

In an interview, Grisham said he handed out tracts at the 2018 Forest Fair, though he was confronted and surrounded by volunteers who drowned him out by beating cans and drums.

Grisham said he intends to return again in 2019. "We're going to do it every year" as long as the park isn't fenced off and the Forest Fair remains "free and open to the public."

According to a copy of the consent order, John Rodda, the city's parks and recreation director, agreed to the settlement on Dec. 3. A semi-retired U.S. District Judge, John Sedwick, accepted the settlement and said he would monitor compliance.

The city agreed to pay a nominal settlement of $1 each to Grisham and Watson. It also said it would pay their legal expenses in an amount to be determined by Sedwick.

In their complaint, Grisham and Watson said they were "burdened" to share their faith with others.

"Grisham and Watson want people to know that all have sinned and fall short of the glory of God and deserve condemnation," according to the complaint. "Grisham and Watson believe all people can be saved by trusting in Jesus."

Assistant municipal attorney Todd Sherwood said in a 2017 letter sent to Grisham's attorney that Grisham was observed "aggressively approaching Fair goers in an attempt to speak to them" before he was directed to stop.

Both sides in the case agreed that the Forest Fair had posted the event with signs saying "No Dogs, No Politics, No Religious Orders." The Fair's website says the same thing.

The situation is complicated by the fact that Girdwood has a contract with Whittier to police its territory, including California Creek Park, the site of the Forest Fair. John Casselman, a Whittier officer who confronted the father and daughter, was originally a defendant in the lawsuit, but Sedwick ordered him dismissed for all aspects of the case in October.

According to the settlement, the city agreed that it wouldn't enforce the Forest Fair's "no religious orders" rule as long as California Creek Park remains "free and open to the public."

In his letter to Grisham's attorney, Sherwood, one of the city's lawyers, said that freedom of religion and other rights guaranteed by the U.S. Constitution "are not absolute" and can be regulated.

"The (Municipality of Anchorage) provided the Fair the same opportunity it provides any permittee: the opportunity to have the exclusive use of the park space for a limited time," Sherwood said. He said any permittee can choose to "use the space for any legal purpose and any type of speech during the time they have the space."

Evangelists win rights to proselytize in city park. (2018, December 11). KTUU News. Retrieved from https://www.ktuu.com/content/news/Evangelists-win-right-to-proselytize-in-city-park-502514021.html

Alaska court: Borough prayer policy violates constitution

The Kenai Peninsula Borough Assembly stands for an invocation from a member of the Satanic Temple.

By Associated Press | Posted: Tue 10:49 PM, Oct 09, 2018

HOMER, Alaska (AP) - An Alaska court says a borough's policy on assembly meeting prayer violates the state constitution.

The Homer News reported Tuesday the Alaska Superior Court ruled the Kenai Peninsula Borough's policy violated a ban on the government establishing an official religion or favoring one religion over another.

The borough had claimed a policy it adopted in 2016 was inclusive of all religious groups.

The policy said invocations could only be delivered by chaplains serving the military, law enforcement and other agencies or members of locally established religious organizations.

An atheist, a member of The Satantic Temple and a member of Homer's small Jewish community applied to give invocations after the policy was established. They were denied because they didn't belong to official organizations with an established presence on the peninsula.

Alaska court: Borough prayer policy violates constitution. (2018, October 9). KTUU News. Retrieved from https://www.ktuu.com/content/news/Alaska-court-Borough-prayer-policy-violates-constitution-496486781.html

Appendix J

Politics - ANWR Obstacles

Democrats on US House committee move anti-drilling ANWR bill

Liz Ruskin, Alaska Public Media May 2, 2019

A bill that would close the Arctic National Wildlife Refuge to oil drilling cleared the U.S. House Resources Committee Wednesday on a party-line vote. The bill is unlikely to become law, but the session offered Congress members a chance to make their best case, for or against drilling, and some did so loudly.

The bill to block drilling in the Arctic Refuge passed out of committee by a vote of 22-14. With Democrats in the majority, its chances of passing the full House are good, but as Congressman Young said, it's hard to imagine it passing the Senate.

Democrats on US House committee move anti-drilling ANWR bill. (2019, May 2). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/05/02/democrats-on-us-house-committee-move-anti-drilling-anwr-bill

Appendix K

Politics - Pebble Mine Obstacles

US House approves anti-Pebble amendment; Young votes no, defends permit process

Liz Ruskin, Alaska Public Media June 19, 2019

The U.S. House voted 233-201 for an amendment that would block the Corps of Engineers from proceeding on a permit for the proposed Pebble Mine. The sponsor, Rep. Jared Huffman, said what Pebble Limited Partnership wants to do near the headwaters of Bristol Bay is unprecedented. "There is no other U.S. hardrock mining operation that captures and treats such a massive volume of contaminated mine water, which is harmful to fish and to public health," Huffman said in the debate over his amendment. "We know that mines are not invincible. Things go wrong." Huffman, D-Calif., said an accident at the mine could devastate Bristol Bay's valuable salmon fishery, degrade Native cultures and ruin businesses that rely on the region's world-class sportfishing. His amendment cuts off funding to the Corps of Engineers to finish the environmental process that's underway. Alaska Congressman Don Young voted against the amendment – not to defend the mine, he said, but to support the permitting process.

US House approves anti-Pebble amendment; Young votes no, defends permit process. (2019, June 19). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/06/19/us-house-approves-anti-pebble-amendment-young-votes-no-defending-permit process/

Appendix L

Politics – Climate Change

Alaska GOP Gov. Dunleavy disbands state climate response team

Nathaniel Herz, Alaska's Energy Desk - Anchorage February 23, 2019

Alaska Republican Gov. Mike Dunleavy has formally disbanded the task force formed by his predecessor to guide the state's response to global warming. In an administrative order this week, Dunleavy revoked a separate, 2017 order by Bill Walker, an independent, establishing the task force and a state climate change strategy. Dunleavy's order was not publicly announced. The governor's office sent letters to task force members around 5 p.m. Friday informing them that their work for the task force "has ended." The state's website dedicated to the task force and strategy also appears to have been taken down. "No governor should be tied to a previous administration's work product or political agenda, and nobody should be surprised to see Gov. Dunleavy make this decision," Shuckerow said. "Gov. Dunleavy's focus continues to be on making Alaska safer, protecting the Permanent Fund dividend, encouraging economic growth and opportunity and putting Alaska on the path towards a permanent fiscal plan."
The 20-member climate task force had been chaired by Walker's lieutenant governor, Democrat Byron Mallott. In his order establishing the group, Walker described global warming as threatening the state's natural resources and posing risks to residents' "health, safety and economic future."

Alaska GOP Gov. Dunleavy disbands state climate response team. (2019, February 23). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/02/23/ alaska-gop-gov-dunleavy-disbands-state-climate-response-team/

Appendix M

Technology - Ground Penetrating Radar (GPR)

Ground penetrating radar (GPR) provides a subsurface imaging solution useful for a range of depths and problems, from finding rebar located just inches below a concrete surface to delineating bedrock dozens of feet underneath soil overburden. GPR is rapid, cost-effective, non-invasive, and non-hazardous.

Logic Geophysics & Analytics is the GPR expert in the state of Alaska. We apply our GPR expertise for geologic mapping, road and bridge surveys, concrete imaging, utility locates, borehole clearance, and finding buried objects throughout Alaska and North America. Our use of Sensors & Software industry-leading GPR equipment and advanced data processing software optimizes the results for your project. We've deployed the radar on foot, from helicopters, pulled behind vehicles, and using snow machines, skis, sleds, and 4-wheelers at locations ranging from remote villages to barren tundra to the city of Anchorage and other sites across Alaska.

GPR data collection in winter at the Anchorage International Airport

GPR applications:
Detecting metallic and non-metallic buried objects such as utilities (including HDPE/plastic lines), pipes, drums, and underground storage tanks. Delineating subsurface contamination such as hydrocarbons and chlorinated solvents. Engineering applications including void detection, concrete imaging (rebar and PT cable), foundation investigation, and bridge corrosion detection.
Mapping landfills, depth to bedrock, soil layers, depth to groundwater, and ice lenses.
Borehole GPR for mapping voids, fractures, and pilings.

Logic Geophysics Analytics (2019). Applications. Retrieved from
https://www.logicgeophysics.com

Appendix N

Technology – Aerial Drones

Alaska Aerial Media is Alaska's premier aerial imaging company. The Alaska Aerial Media team has years of experience in unmanned flight operations. We provide a wide range of cutting-edge platforms and sensors to produce a variety of final products. By combining our tools and expertise we are able to elevate the value of every project we are a part of to new heights.

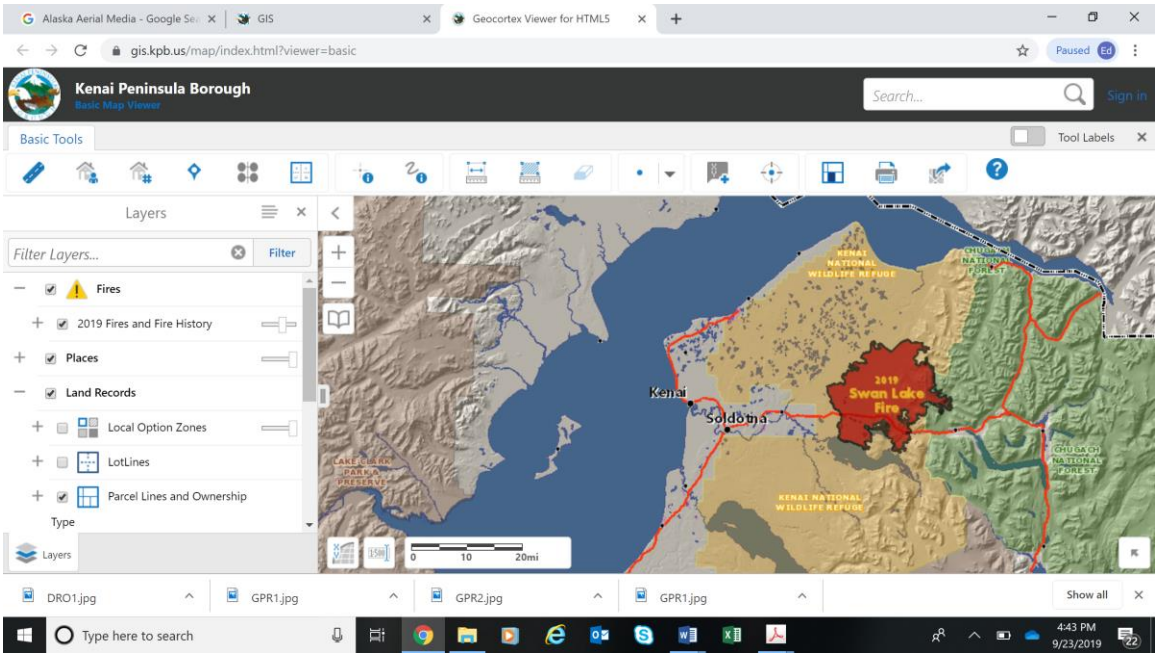
When you boil it down, Alaska Aerial Media is a data acquisition and analyzation company; drones are our tool of choice. It's no secret we got our start in this industry focusing on cinematography (hence the name). We do still provide services to that sector but have refocused the company on two main uses; Survey / Mapping and Infrastructure Inspection. We see these two industries being highly benefitted by drones currently and well into the future and look forward to growing and developing our capabilities within these areas.

Alaska Aerial Media (2019). Applications. Retrieved from https://www.akaerial.media

Appendix O

Technology - GIS Systems

The Kenai Peninsula Borough GIS Division creates, edits, and manages data necessary for the operation of all Borough departments. GIS is used daily to support the decision-making processes of our local government, as well as by the Borough's Emergency Response system. We also provide data to various private, native, state and federal entities. We store and maintain air photography dating back to 1967, and satellite imagery as recent as 2013. Frequently, data is provided to the public in digital and hard copy format.

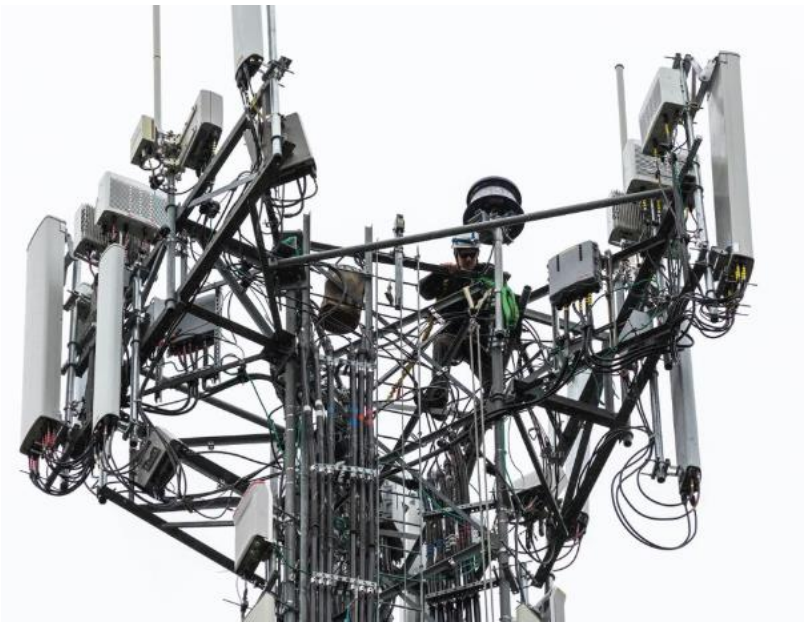


Kenai Peninsula Borough (2019). GIS Map. Retrieved from https://gis.kpb.us/map/index.html?viewer=basic

Appendix P

Technology – Communications

GCI announces state's first wireless 5G network in Anchorage



Wesley Early, KOTZ - Kotzebue June 18, 2019

The state's largest telecommunications company announced it's building the first 5G wireless network in the state's largest city. GCI will partner with Swedish telecom company Ericsson to upgrade GCI's existing sites to deploy 5G service throughout Anchorage. GCI says the project will be complete in 2020, with 5G service coming online in the first half of the year. They estimate it will increase wireless capacity in the city by 10 times or more. GCI CEO Ron Duncan says that other communications companies like AT&T have begun implementing 5G technology in several Lower 48 cities, but this would be the northernmost network in the country.

"It'll be a long time, I believe, before any of the other carriers get real 5G to Alaska, but this is our market," Duncan said. "They're starting in their biggest markets, we're starting in our biggest market, and we're going to build out from there."

Duncan says the existing infrastructure GCI has in Anchorage, in the form of macro cell sites, fiber networks and radio spectrum will allow mobile access to internet throughout the city. Networks relying on cable access to internet won't be different in this phase of the project.

GCI announces state's first wireless 5G network in Anchorage. (2019, June 18). Alaska Public News. Retrieved from https://www.alaskapublic.org/2019/06/18/ gci-announces-states-first-wireless-5g-network-in-anchorage/