

**Recruiting Project Managers: A Comparative Analysis of Project Manager Leadership
Competencies and Recruitment Signals from Job Advertisements**

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ATTESTATION OF AUTHORSHIP

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person except where explicitly defined in the acknowledgements, nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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ABSTRACT

Projects are prone to distinct risks which can be of different types and different degrees. As these risks can have a possible negative influence on the project aspects such as cost and schedule, and consequently, project goals, it is essential for organizations to recruit an effective project manager. This research addresses how organizations signal leadership competencies required for a project manager through project manager job advertisements in Australia and New Zealand. This study complements the leadership competencies mentioned in the Project Management Body Of Knowledge (PMBOK) for project managers by developing a list of project manager competencies, categorizing the competency components into knowledge, skills, and abilities, and performing a content analysis of the use of these competencies. This study examined job advertisements between March 2020 and May 2020 across Australia and New Zealand for the project manager role. Analysis show that the top five leadership competencies across Australia and New Zealand are influencing, communication, ability to lead, team building, and problem solving. Overall, it is observed that the project manager leadership competencies advertised match with the project manager leadership competencies in PMBOK. The findings of this research suggest that when using different terminologies to describe project manager leadership competency requirements, recruiters need to ensure that they provide detailed information of these competency requirements in order to deter applicants from drawing conclusions based on available information.

CHAPTER 1.0: INTRODUCTION

In an environment that is changing, complex, and challenging, an organization's development, growth, and capabilities, is greatly influenced by its project manager (PMI, 2017a, 2017b). With the evolving nature of the project manager's role, it is essential for a project manager to strengthen the role with a vast range of knowledge and skills complementing the conventional activities of project administration so that the other competencies required in modern project management is acquired (Ballesteros-Sanchez, Ortiz-Marcos, & Rodriguez-Rivero, 2019). The dual-leadership role of a project manager overseeing project team members who are under the direct authority of the project manager, and subject matter experts temporarily connected with the project (e.g. organization's functional, technical, and support departments) but fall under the authority of their parent department, highlights the relevance of solid leadership skills for effective project management (Gillard, 2009). This shows that one of the challenges faced by a project manager is responsibility without authority. Within project-based sectors, the attention towards the relationship between project manager's performance and project manager's competencies has been expanding (Cheng, Dainty, & Moore, 2005). Recently, several contributions to the Project Management literature have drawn attention to the competencies of a project manager (e.g. Moradi, Kähkönen, & Aaltonen, 2019 and 2020; Ballesteros-Sanchez et al., 2019; Podgórska & Pichlak, 2019; Alvarenga, Branco, Guedes, Soares, & Silvia, 2019).

For decades, the concept of competency has been expansive and ambiguous (Ahsan, Ho, and Khan, 2013; Stevenson and Starkweather, 2010). Competency can foresee the behaviour of an individual in a vast range of situations and job tasks (Liikamaa, 2015). According to Parry (1996), competencies can be defined as a combination of related knowledge, skills, and personal characteristics, and these competencies have an impact on the work of both individual and group in an organization (as cited by Ballesteros-Sanchez et al., 2019, pp. 306-321). The objective of competencies is to exhibit the relationship between performance that is perceived, performance that is anticipated in the future, and expected performance (Antonacopoulou & FitzGerald, 1996).

In project management, choosing project managers is one of the most important decisions (Sadatrasool, Bozorgi-Amiri, & Yousefi-Babadi, 2016). Vacancies for the role of project manager, that are to be filled by employees with high qualification, requires very thorough evaluation processes (Çelikkilek, 2018). The project manager is accountable for achieving project objectives within the allocated time and resources, and as a result, the project manager's knowledge, skills, and experience

must correspond with the size, complexity, and risk of the project (Sadatrasool et al., 2016). Recognizing the skills demonstrated by a project manager is an highly important step in the selection and development of an effective project manager who has the ability to handle any problem and achieve project objectives within the allocated time and resources (El-Sabaa, 2001). Therefore, it is critical for organizations to select the right project manager.

Previous literature generally focuses on the interrelationship between project manager competencies and project success (Alvarenga et al., 2019). Despite the importance of selecting the right project manager, prior research on how organizations signal the leadership competency requirements is rare. Advancing in the Project Management field requires this gap to be filled. Examining the recruitment of project managers from job advertisements can help fill this gap.

1.1 Research Aims and Question

The purpose of this research is to determine how Australian and New Zealand organizations signal the required leadership competencies as promoted by the Project Management Body of Knowledge (PMBOK) for project managers. The findings of this research should assist potential project managers to develop their skills to match with the market demands and help recruiters to signal the competency requirements effectively. Along with practical implications, this research also aims at contributing to the Project Management literature by highlighting project manager leadership competencies that are currently in demand and how terminologies used in job advertisements may vary from PMBOK.

For this purpose, the main research question is:

How do Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers?

1.2 Research Methodology

This research used the qualitative content analysis method as the research aims to present an explanation of the project manager job advertisements analyzed.

The sample for this research were collected between April 2020 and May 2020 comprising of 100 job advertisements for the role of project manager across Australia and New Zealand. Of the 100 job advertisements selected for the role of project manager, 60 job advertisements are from Australia

and 40 job advertisements are from New Zealand. The samples were obtained from Seek Limited (SEEK), an employment website. Criterion sampling was applied to this research and qualitative content analysis as the research method to analyze data. This research employed the directed content analysis approach and adopted the frequency approach to coding. Data is recorded under KSA classification.

1.3 Dissertation Structure

To accomplish the research goals, this study is organized under five chapters: introduction, literature review, methodology, results and analysis, and discussion and conclusion. The structure is as follows:

Chapter 2: Literature Review

This chapter starts with the definition of a project and project management. Next, the chapter presents an overview of the project management profession and the project manager role. The chapter then explores literature review on competency perspectives, followed by competency frameworks. Finally, the literature on leadership competency and signaling theory is reviewed.

Chapter 3: Methodology

This chapter presents the research methodology used for data collection and analysis in this study. The chapter commences with an overview of the research philosophy, followed by an overview of the research method, and a discussion on the content analysis method. This research employed content analysis to review job advertisements for the role of project manager in both Australia and New Zealand.

Chapter 4: Results and Analysis

This chapter discusses the findings of this study. The findings analyze 100 job advertisements across Australia and New Zealand for the role of project manager. The analysis presents an overview of the job title distribution followed by a comparison of competencies across countries, project industries, and sectors. The findings are analyzed under KSA classification wherein competencies that have a frequency of more than 10% are captured under each classification. Finally, an analysis of the overall competencies is presented.

Chapter 5: Discussion and Conclusion

This chapter discusses the findings of this research, compares the findings to relevant literature, and discusses similarities and differences. The analysis of project manager job advertisements has helped in identifying the distribution of top skills across PMBOK general competencies and identifying key leadership competencies required for a project manager in both Australia and New Zealand. The findings of this research help understanding how Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers.

CHAPTER 2.0: THEORETICAL BACKGROUND

2.1 Introduction

This chapter starts with the definition of a project and project management. Next, the chapter presents an overview of the project management profession and the project manager role. The chapter then explores literature review on competency perspectives, followed by competency frameworks. Finally, the literature on leadership competency and signaling theory is reviewed.

2.2 The Project Management Body of Knowledge

Projects are commonly created in order to execute change with an individual assigned to ensure its successful completion. The impetus for projects tends to fit into three categories: to solve problems such as low operational efficiency, to meet organizational needs, for example additional office space, and identify opportunities such as penetrating a new product market. Thus, projects constantly emerge in many organizations which requires management to address these factors for operating the company or organization (Heerkens, 2002). These problems, needs, and opportunities generate solution identification and executing these solutions brings about a change for the organization. The primary change agent is the project manager and the model for executing this change is known as the project management process (Heerkens, 2002).

In October 1998, the American National Standards Institute (ANSI) accredited the Project Management Institute (PMI) as a standards developer. These standards outline the nature of project management processes with regard to the integration, interactions, and purpose of these processes. The standard assumes the project, the project manager, and the project team are attached to the same organization. The Project Management Body of Knowledge (PMBOK) presents the standard for project management of a project (PMI, 2013b).

2.3 What is a Project?

The Project Management Institute (PMI) defines a project as “a temporary endeavor undertaken to create a unique product, service, or result” (PMI, 2013b, p. 3). The nature of the project work is regularly expanding, thereby creating its own work rules, and unique in that it does not repeat itself

in the workplace (Pinto, 2020). According to Pinto (2020, p. 26), projects can be treated to be any set of activities and tasks that:

- Have definitive purpose to be completed within specific stipulations
- Have specified start and end dates
- Have financing restraints, if applicable
- Employ human (people) and non-human resources (for example, money)
- Multifunctional (cut across all functional areas)

Projects are complex, one time processes; limited by budget, schedule, and resources; developed to resolve a clear goal or set of goals, and are customer-focused (Pinto, 2020). Although every project builds a unique product, service, or result, the outcome of the project can be tangible or intangible. While certain project deliverables and project activities may involve repetitive elements, these repetitions do not alter the fundamental and unique aspects of the project work (PMI, 2013b).

2.3.1. Project Management

The Project Management Institute defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2013b, p. 5). The proficient application of these skills, tools, and techniques can be obtained only after undergoing on-the-job experience along with significant amount of formal education (Heerkens, 2002).

The development of the project management plan is a repetitive activity and is elaborated more and more throughout the life cycle of a project due to the possibility of change (PMI, 2013b). These changes can be with regard to the project requirements or project objectives. A project life cycle refers to each phase of a project – the initiation phase (the need for the project is identified), the planning phase (project solution for the identified need is further developed), the execution phase (performing the prescribed work), and the close-out phase where the project concludes (Heerkens, 2002). For a project to be successful, the interpersonal and behavioural aspects of the project life cycle are pivotal.

2.4 Project Management Profession

The recognition of project management as a formal management process has evolved over time. To illustrate, during the 1940's, projects were managed by line managers using the concept of over-the-fence management. Each line manager would perform the work required by the line organization and upon completion of work the line managers hoped someone else would take the responsibility further

(Kerzner, 2003). The problem with this management process was the absence of single point of contact for customers. Although this method was straightforward for small projects, it became more difficult with the increase in size and complexity of projects. When the United States entered Cold War, the conventional use of over-the-fence-management was no longer acceptable to the Department of Defense. They stipulated that for managing projects a formal project management process was required. Simultaneously, for all activities relevant to space programs, the National Aeronautics and Space Administration (NASA) ordered the use of project management for all activities relevant to space programs (Kerzner, 2003). The year 1950 is considered as the beginning of the modern project management era (SĂVESCU, 2018).

Beyond aerospace and defense, project management by the late 1950s and early 1960s, grew at a relatively slow rate with private industries yet to identify a practical value in project management (Kerzner, 2003). In 1967, the International Association for Project Management (IPMA) and the Project Management Institute (PMI) was founded in Europe and the United States respectively (SĂVESCU, 2018). By 1970s and early 1980s the size and complexity of project-oriented activities had grown exponentially to the point where many were deemed unmanageable and more companies restructured to formalize the project management process. Finally, by the 1990s, companies realized that project management implementation was a requirement and not an option (Kerzner, 2003).

Due to the diverse nature of the project management discipline, the credential required to be a project manager vary. In a review looking across the certified schools and colleges Springer (2013) noted the absence of bachelor's degrees (undergraduate) in project management. Generally, Springer (2013) found that individuals gain qualifications in other disciplines such as marketing or engineering and eventually find themselves responsible for managing projects within the same discipline of study and/or across other disciplines. Without obtaining project management experience firsthand, Springer (2013) points out it is difficult to appreciate the cross-discipline nature of project management. The need for prior work experience is recognized through the emergence of several master's level degrees in project management, many of which move beyond the operational elements to include discussions on topics such as management, leadership, and risk management (Springer, 2013).

Projects can also involve various geographically scattered but interdependent activities, suppliers, and stakeholders that are prone to distinct risks which can be of different types and different degrees (Shishodia, Dixit, & Verma, 2018). As these risks can have a possible negative influence on the project

aspects such as cost and schedule, and consequently, project goals, it is essential for organizations to recruit an effective project manager.

2.5 Project Manager

PMI defines a project manager as “the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives” (PMI, 2013b, p. 16). Delivering services effectively and efficiently is considered to be the major role of a project manager (Rivera & Kashiwagi, 2016). A project manager is considered to be the individual responsible for the completion of a project within a set time and budget, and deliver the required quality or performance standards (Sommerville, Craig, & Hendry, 2010). A project manager is expected to meet the cost objectives, schedule objectives, functionality objectives, and the quality objectives, and must ensure that the project is run efficiently (Heerkens, 2002). Further, project managers need to be familiar with the project management dynamics in order to be able to adequately manage the team members (Cesarotti, Gubinelli, & Introna, 2019). Projects are essential for an organization’s growth and survival. They create value through enhanced business processes and are crucial in the development of new products and services, providing a pathway for companies to respond to competition and environmental and marketplace changes. Thus, the role of the project manager shift beyond the operational arena to one that is more strategic (PMI, 2013b).

For over three decades, the role of project managers has been studied by several researchers with different focuses such as customer satisfaction, project team building, and managing changes. For example, one study explored the project manager’s role in securing customer satisfaction (Ireland, 1992). In another study, 151 project teams were surveyed to assess the project manager’s role in project team building (Ammeter & Dukerich, 2002). A further study highlighted the project manager’s role in managing changes (Crawford & Nahmias, 2010) while another sought to provide an understanding of the construction project manager roles (Sommerville, Craig, & Hendry, 2010).

In order to fulfill an organizational strategic need, the role of a project manager is positioned more towards a managerial and leadership role rather than seeing the role as an administrator of the project (Ahsan et al., 2013). While project managers need to interact with stakeholders in order to accomplish the work, it is essential for a project manager to possess certain interpersonal skills such as ability to lead, communication, trust building, and decision making (PMI, 2013b). Project leadership plays a very important role in establishing trust and the ultimate aim of a project manager is establishing trust for

managing outcomes (Anantatmula, 2010). Marincea and Dascalu (2011) found that majority of the project managers are mindful of their role as key communicators and in order to assist teams in achieving performance, certain communication tools and instruments are used by the project managers. Because each project is considered unique, it is essential for a project manager to identify the skills essential for that particular project and apply them accordingly (Sommerville et al., 2010). At the same time, there is an implicit expectation for a project manager to act as an improvement agent and thereby contribute to the cumulative project management efficiency (Sundqvist, 2019). In general, the responsibility of a project manager is to gratify needs and these needs can be task related needs, needs of a team, or needs of an individual (PMI, 2013b). Factors such as the requirements of the labour market, changing technologies, and organizational demands play a significant role in determining the role of a project manager and will continue to change accordingly (Ahsan et al., 2013).

Thus, accomplishing the work requires a project manager to possess certain skills or competencies and apply these skills to the project activities. The next section discusses the origin of competency, competency frameworks, and project manager leadership competencies.

2.6 Competency Perspective

A competence can be viewed as referring to the primary demonstration of an activity which is gauged with a “yes” or a “no”: an individual is either competent or not competent (Sampson, 1998). Conversely, competency is a range of various characteristics, behaviours, and traits that an individual must possess for effective job performance (Abraham, Karns, Shaw, & Mena, 2001).

Competencies, as a concept, has been around for centuries right from the medieval guilds wherein apprentices picked up skills by working with a master and in turn the apprentices were rewarded with credentials on reaching certain standards of the workmanship related with and established by the trade. The industrial revolution paved the way for studying work and jobs and subsequently, skills required to perform those jobs. With the arrival of scientific management in the early twentieth century followed by the Human Relations school of management thought, both US academics and practitioners were drawn to learning different ways of organizing work and motivating workers (Mclagan, 1997). In the following years, driven by a desire to increase their economic competitiveness, the United States government funded several trial projects associated with identifying specific behaviours and competencies to match the demands of society and the economy. The focus then shifted in the 1970s and early 1980s, the United States academics began focusing on strategic

management too as the key to competitive success (Sylvia, 2000). For example, an article published in the Harvard Business Review discussed approaches to the strategic planning where the authors Prahalad and Hamel (1990) recommended that to successfully exploit all resources of an organization, it was essential they fully recognized their core competencies and capabilities (Prahalad & Hamel, 1990). Subsequently, competency approaches continue to be an established norm for several international public and private companies internationally (Pickett, 1998; Strebler & Bevan, 1996; Valkeavaara, 1998).

Baumotte, Fonseca, Silva, and Raj (2013) suggest that the competency-based approach can be traced back to the 1970s, when more complex job requirements determined the length taken in the selection of an appropriate employee (as cited by Alvarenga et al., pp. 277-292). Thus, the concept of competence provided the solution that enabled substituting 'old-school' job descriptions with an approach where people competencies are emphasized (Hollenbeck, McCall, & Silzer, 2006). While the competency model or the characteristic based competency approach had allegedly been most common in the United States, the competency standards or the demonstrable performance approach had provided the foundation for national qualification frameworks in countries such as the United Kingdom, Australia, New Zealand, and South Africa (Crawford, 2005).

McClelland, a pioneer in the field, stated that success can be directly influenced by a manager's competencies (McClelland, 1973). McClelland's ideas influenced several other competency studies related to management practice (Ahsan et al., 2013). For example, the concept of competency was studied with a focus on developing competency models for promoting integrated human resource practices (Rodriguez, Patel, Bright, Gregory, & Gowing, 2002) and developing a competency-based framework in order to promote corporate entrepreneurship (Hayton & Kelley, 2006). In the field of project management, research conducted to determine aspects of competence that are characteristic of effective project managers or high performing project managers can be traced back since the late 1970s (Crawford, 2005). One such study investigated the potency of leadership styles in different project-oriented work environments (Thamhain & Wilemon, 1977). Since early 2000, several studies have explored the concept of competencies in the project management field. For example, research has explored the perceptions of senior management concerning project management competence (Crawford, 2005), with another study attempting to compare the behavioural competencies of client focused project managers and production-focused project managers in the construction sector (Dainty, Mei-I, & Moore, 2005).

2.6.1 Project Manager Competencies

In order to create a baseline of competence, it is essential to assess the current capabilities of a project manager (PMI, 2017b). According to Grzesik and Piwowar-Sulej (2018), competencies can be categorized in three ways: 1) hard competencies (for example: problem solving skills, decision making in specialized areas such as time, scope, and quality management); 2) soft competencies (for example: interpersonal skills); and 3) conceptual competencies (for example: strategically coordinating and integrating all project related activities). Crawford (2000) explains that one of the major factors in the successful delivery of projects is the competence of project managers. It is essential for project managers to have competencies in areas that have a major impact on a project's success (as cited by Moradi, Kähkönen, and Aaltonen, 2019). Turner (1999) determined seven effective project manager characteristics comprising of problem-solving ability, results orientation, energy and initiative, self-confidence, perspective, communication, and negotiation ability. A study examining potential discrepancies between results of past research and standards of practice on the competencies of project managers found eleven competencies considered essential for a project manager and these key competencies include communication, leadership, teamwork and cooperation, flexibility, problem solving, goal orientation, developing others, impact and influence, stakeholder management, cost management, and resource management (Moradi, Kahkonen, & Aaltonen, 2019). Project Management standards such as PMBOK have instituted a firm standing in the teaching, practice, and learning of project management. Brill, Bishop and Walker (2006) see that these are insufficient in illustrating the broad range of competencies others have noted as shown above. As a result, certain competencies critical to project management such as communication skills, problem solving, and leadership need to be more sufficiently addressed in project management standards (Brill, Bishop, & Walker 2006).

Interestingly, as Alvarenga et al., (2019) comments, with the regular addition of new competencies project managers encounter lists of competencies that are inhumane or unrealistic. At the same time, considering the expanse of the Project Management field and project manager roles are undergoing constant change even after various robust and effective project management studies (Muller, Gerald, & Turner, 2012; Pant & Baroudi, 2008), the relationship between project manager competencies and success is still not well understood (Alvarenga et al., 2019).

Goodwin (1993) considers three main skills essential for a project manager – technical, conceptual, and human skills. A study conducted by Jiang, Klein, and Margulis (1998) examined 118 IT project

managers through questionnaires asking each candidate to rate the importance of each skill (as cited by Afshari, 2015, pp. 2827-2838). The top skills ranked by the candidates were managing and directing skills, followed by communication skills, and interpersonal skills such as patience and diplomacy (Afshari, 2015). A further study conducted to determine IT project manager competencies to achieve IT project success identified team management, business domain knowledge, communication, project management, and people skills as the most relevant competencies and technical skills were considered relatively less relevant (Silva de Araújo & Pedron, 2015). It can be observed that there are variations in competencies considered as essential. This can be due to factors such as the organization's goals, project requirements or perceived market demand.

Along with general management expertise and area-specific skills, a project manager must possess competencies such as knowledge, performance, and personal competence for effective project management (PMI, 2013b). Knowledge competence, performance competence, and personal competence will be touched upon in the following sections.

2.7 Competency Frameworks

Competency is a range of various characteristics, behaviours, and traits that an individual must possess for effective job performance (Abraham et al., 2001). In Mills' view (2007) a competency framework is described as a comprehensive set of competencies and behavioural statements associated with competencies which are important to effective performance in the field of work and practice (as cited by Arakawa, Yamamura, Duggan, & Bates, 2020, pp. 396-404). Competency frameworks boost an employee's understanding of the organization's challenges and in what way their behaviour can contribute towards success of the organization (Hayton & Kelley, 2006). While competency frameworks present a base to plan workforce development activities for assisting workforces to improve required knowledge, skills, attitudes, and confidence, they specifically support training and course development, recruitment, provide guidance to professional standards and accreditation, and prompt policy development (Barry, Allegrante, Lamarre, Auld, & Taub, 2009). Competency frameworks also present a practical path for integrating an organization's HR practices across the life cycle of an employee, starting from their selection, through the employee's training and development, and eventually to their performance and appraisal (Sutton & Watson, 2013). Frameworks categorize identical competencies (Shickle, Stroud, Day, & Smith, 2019). For example, the UK Public Health Skills and Knowledge Framework (PHSKF) covers 70 competencies classified under 13 functions (England,

2016), whereas, a competency framework designed by Boyatzis, Young, and Dulewicz cover 17 competencies and 4 competency clusters (Boyatzis, Young, & Dulewicz, 2009).

With growing interest in project management competencies, project managers and their competencies have been placed in a spotlight (Chipulu, Neoh, Ojiako, & Williams, 2013; Loufrani-Fedida & Missonier, 2015). Project management institutions have established project management competency models such as the PMCD - Project Management Competency Development (PMI, 2013a) and the International Project Management Association Competence Baseline (Loufrani-Fedida & Missonier, 2015). In this study, the PMCD framework (PMI, 2017b) is utilized to construct research objectives as it is considered the most comprehensive and extensively used standard in the Asia-Pacific region with regard to project manager competencies (Ahsan et al., 2013).

The purpose of the PMCD is to present a framework to define, assess, and develop project manager competencies (PMI, 2017b). The PMCD defines the competency dimensions and determines competencies that in all likelihood can impact a manager's performance in project management, although the severity of its impact on management success can differ in terms of project types and characteristics (PMI, 2017b). According to the PMCD, project manager competency consists of three dimensions – knowledge competence, performance competence, and personal competence as illustrated below (Figure 1). Assessing the three dimensions of competence enables a project manager to have a better understanding of the skills required to be recognized as a competent project manager (PMI, 2017b).

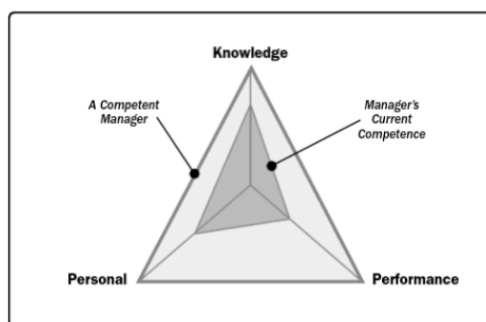


Figure 1. PMCD Framework Dimensions of Competence (PMBOK, 2017b, p. 4)

The PMCD framework affirms leadership competencies such as knowledge, performance, and personal, which are then broken down into their component parts – knowledge, skills, and abilities (Ahsan et al., 2013). To better aid the analysis of the basic components of these competencies, this study separates the competencies into the component parts of KSAs.

2.7.1 Knowledge Competence

Knowledge competence is one of the three central competencies vital to be a project manager. It mirrors the knowledge required to execute the tasks required for the project (Ahsan et al., 2013). Simply put, “knowledge refers to what the project manager knows about project management” (PMI, 2013b, p. 17). The PMCD framework suggests that the knowledge competence can be exhibited by passing a justly credentialed assessment such as the Project Management Profession (PMP)[®] or any equivalent international project manager accreditation (PMI, 2017b). A project manager has to be familiar with the knowledge areas listed in PMBOK such as project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communication management, project risk management, project procurement management, and project stakeholder management. In general, knowledge-based competencies are objective knowledge that one must acquire to be able to perform their job effectively (Springer, 2013). For example, a batting coach of a cricket team must possess the knowledge of the game as well as the technicalities involved in batting department. Similarly, a construction project manager must possess knowledge of safety standards. In this study, the knowledge competence captures a project manager’s educational background, professional project management certifications, knowledge of MS project, and knowledge of health and safety procedures.

2.7.2 Performance Competence

According to the PMI (2013b), performance refers to the work accomplished by the project manager while employing their project management knowledge. While testing a model of project manager leadership competence, it was found that project performance was positively and compellingly associated with leadership competence, suggesting that project performance such as schedule performance, cost performance, and quality performance significantly improved when a project manager focuses on people-related leadership (Ahmed & Anantamula, 2017). The Project Management Competency Development (PMCD) categorizes ten project manager competencies under the performance competence group – project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communication management, project risk management, project procurement management, and project stakeholder management (PMI, 2017b). Dimensions of competencies such as leadership qualities, effective communication skills, management skills, result orientation are required to be exercised to tackle complexities associated with a project and to improve the performance of the project (Khattak & Mustafa, 2019). The

performance of a project with respect to time, cost, and quality were influenced by a critical success factor, which is, leadership style (Larsson, Eriksson, Olofsson, & Simonsson, 2015). A test performed on the skill components sought to identify how they affected project performance improvement with respect to time, cost, and quality (Sunindijo, 2015). It was found that project time performance was positively impacted by interpersonal influence; project cost performance was influenced by emotional intelligence, apparent sincerity, interpersonal skill, and budgeting influence; and project quality management was influenced by visioning, interpersonal skill, interpersonal influence, quality management, apparent sincerity, and document and contract administration (Sunindijo, 2015). A detailed study on flexibility was conducted to determine which among the five areas of flexibility (what, how, who, when, and where) had a significant impact on end-project performance (Sohi, Bosch-Rekveltdt, & Hertogh, 2019). This study found that the “how” flexibility had a compelling effect on end-project performance. This suggests, that if project managers increased the flexibility in terms of “how” in their management during early stages of the project, then their end-project performance can enhance significantly (Sohi et al., 2019).

Interestingly, over the past 25 years, although there has been an increase in the number of project management education and certifications, the delivery of services is struggling with low performance (Rivera & Kashiwagi, 2016). Every personality does not suit a project manager role and although there is no guaranteed method to pre-selecting the ultimate project manager, an ideal project manager needs to display an extroverted perceptive personality alongside mastering the project management process knowledge (Bevilacqua, Emanuele Ciarapica, Germani, Mazzuto, & Paciarotti, 2014).

2.7.3 Personal Competence

Personal competence reflects the operational style of a project manager while conducting project related activities (PMI, 2013b). The effectiveness of personal competence comprises attitudes, leadership, and core personality characteristics (PMI, 2013b). PMCD categorizes six project manager competencies under the personal competence category – communicating, leading, managing, cognitive ability, effectiveness and professionalism (PMI, 2017b). Project managers interact with the project team and other stakeholders to accomplish the work, and analyzing the situation and interacting aptly requires project managers to balance their ethical skills, interpersonal skills, and conceptual skills (PMI, 2013b). Interpersonal skills includes various skills such as ability to lead, team building, motivation, communication, influencing, decision making, political and cultural awareness, negotiation, trust building, conflict management, and coaching (PMI, 2013b). Individuals who distinguish themselves by exhibiting exemplary relationship and communication skills, alongside a

positive attitude, form the top 2% of project managers who are nominated by their senior managers and team members (PMI, 2017b). Blake and Mouton (1968), and McGregor (1967) have emphasized that personal competencies that are based on showing empathy for other people (for example, problem solving), human interactions, and building trust are essential for an effective manager to possess (as cited by Luis, Isabel, & Rocio, 2019, pp. 306-321). Similarly, an examination of the relationship between the three dimensions of leadership competencies – emotional, managerial, and intellectual, and its impact on project success supports the importance of project manager's personal characteristics, skills and knowledge required for project success (Podgórska & Pichlak, 2019).

Jantanee, Sherif, and Nick (2018) examined the correlation between personal competencies of project managers with satisfactory outcomes in health development projects. They found a satisfactory outcome is positively correlated with personal competencies such as communication, ability to manage teams and tasks, and cognitive ability (Jantanee, Sherif, & Nick, 2018). Similarly, another study found that personal attributes such as emotional intelligence, cognitive flexibility, and systemic thinking, mediated by stakeholder relationships, aid emotional, managerial, and intellectual competence, and thereby contribute to project success (Mazur, Pisarski, Chang, & Ashkanasy, 2014). Interestingly, project success and stakeholder relationships were not influenced by systemic thinking (Mazur et al., 2014). It has been observed that project managers with higher schooling have a more noticeable emotional stability, conscientiousness, and openness to experience, and display personality traits desired in project managers through higher levels of planning, creativity, dedication, and efficiency (Luis de Moura, Janes Carneiro, de Lemos Dias, & Silva Oliveira, 2019). A study gauging the effectiveness of executive coaching for strengthening the personal competencies in project management field, observed that executive coaching had the greatest impact on behaviours that relate to leading, managing, and exploring strategies for dealing with challenging situations (Ballesteros-Sanchez et al., 2019).

2.8 Leadership competency

Leading a project team is considered more challenging due to the specificity of a project (Podgórska & Pichlak, 2019). A project manager has to deal with more frequent changes, pressure to complete projects within a set time and cost, and building relationships with new teams (team members) being formed for every new project (Podgórska & Pichlak, 2019). Through leadership competencies, project managers play an important role in motivating people to achieve project success (Ahmed & Anantatmula, 2017). Improving performance of a project not only requires specialized project

management tools and techniques, but also requires developing a project manager's leadership competencies (Berg & Karlsen, 2016). Along with the decision-making leadership competence, another crucial leadership competence of a project manager is establishing trust among project team members and stakeholders (Ahmed & Anantatmula, 2017; Brewer & Strahorn, 2012). Trust among project team members and stakeholders is established through communication and thus, communication capabilities of a project manager is pivotal for a project's success as it requires project managers to communicate expectations and ensure clarity in communication among project team members and project stakeholders (Ahmed & Anantatmula, 2017).

Leader-centered approaches have dominated the enormous amount of research on leadership (Jackson & Parry, 2018). While an interdisciplinary discussion, much of the dominant theoretical models of relationship have their origins within US Business Schools using quantitative methodologies. For example, research has looked at the behaviour of leaders (Argyris, 1976; Fleishman & Harris, 1962), situational moderator variables (Evans, 1970; Hersey & Blanchard, 1969), relationships among leaders and followers (Greene, 1975; Hollander, 1995), leader's role in organizational culture (Schein, 2004), leader's emotional intelligence (Goleman, Boyatzis, & McKee, 2003), and commitment of subordinates (Field, 1989). Thus, within the leader-centered school of thought, the dominant paradigm aligns with identifying a leaders' competencies (Avolio & Bass, 1995; Goffee & Jones, 2000).

Taking a leader-centered approach, effective leaders are distinguished from other leaders by operating through small skill range or competence areas (Goffee & Jones, 2000; Kouzes & Posner, 1999). While the research does not prescribe the way identified skills and competencies are operationalized, their emphasis is on the basic personality of the leader (Hogan & Hogan, 2001). To illustrate, Collingwood (2001) suggests leadership is personal (as cited by Dulewicz & Higgs, 2005, pp. 105-123) and the personality of the leader plays a significant role in the operation of leadership (Dulewicz & Higgs, 2005). Thus, leadership appears as a characteristic in all the three areas of competency (Podgórska & Pichlak, 2019). Personal characteristics might be the cause for work performance being a fusion of competencies such as skills and knowledge with personal characteristics such as traits and emotional intelligence that produced work performance (Dulewicz & Higgs, 2005; Gehring, 2007). In addition, Turner and Müller (2006) suggest that various combinations of these competencies are relevant in various situations (as cited by Podgórska and Pichlak, 2019, pp. 869-887), indicating that it is necessary for leaders to be adaptable to cope with a variety of situations.

In the field of project management, various studies have shown that leadership characteristics are pertinent to project managers. For instance, as a non-technical skill, leadership has gained more attention from researchers working within the realm of technical project management. Mohan (1999), for example, tested the appropriateness of a popularized and influential present-day leadership model, transformational leadership in a technical project environment. The objective of this study was to identify the key characteristics of technical project leadership. The sample for this survey-based research involved 70 participants from information systems projects in Australian organizations. The study recognized that there was no one particular effective leadership style that can be effective in all project situations. The findings suggest that enhanced leadership effectiveness requires a flexible leadership style characterized by technical leadership, intellectual stimulation, behavioural charisma, and contingent reward behaviours (Mohan, 1999). A further quantitative study (Müller & Turner, 2010) sought to identify the competency profiles of successful project managers in different types of projects. This study utilized the Leadership Development Questionnaire (LDQ) to capture 400 responses in order to profile the project manager competences such as intellectual, managerial, and emotional. It was found that transactional leadership is more significant to projects that are relatively simple and transformational leadership is paramount in projects that are more-demanding (Müller & Turner, 2010). The characteristics of a transactional leader include contingent reward (for example, promising rewards for good performance), active management by exception (for example, monitoring deviations from rules and standards), passive management by exception (for example, intervening only if set standards are not met), and laissez-faire (for example, avoiding making decisions) (Bass, 1990). The characteristics of a transformational leader include charisma (for example, providing vision and a sense of mission), inspiration (for example, communicating high expectations), intellectual stimulation (for example, careful problem solving), and individualized consideration (for example, giving personal attention) (Bass, 1990).

While the research cited above illustrate studies looking at the leadership characteristics of a project manager, other research has sought to review the relationship between leadership competencies and project performance. A study conducted within a project-based organization setting in Indonesia examining the relationship between leadership competency and performance of a project (Hartono, Sulisty, & Umam, 2019). The study found that the leadership profiles of successful project managers differed across project complexity levels and across industries such as construction, information and communication technology, and consultancy (Hartono et al., 2019).

2.8.1 Leadership competencies in PMBOK

From the literature review above, we see that PMBOK suggests effective project management requires a project manager to possess knowledge, performance, and personal competences. From among these three project manager competences, leadership competencies is classified under the personal competence as it determines a project manager's ability to guide the project team with a goal of achieving the objectives of the project (PMI, 2013b). In order to manage a project team and establish high-performing teams, a project manager must possess a range of interpersonal skills with special focus on communication, conflict management, negotiation, influencing, coaching, effective decision making and ability to lead (PMI, 2013b). Achieving high performance requires a project manager to effectively communicate the vision of the project and motivate the project team by providing challenges and opportunities, timely feedback and support, recognizing and rewarding good performance (PMI, 2013b). Thus, high team performance can be achieved when project managers use open and effective communication, manage conflicts in a constructive manner, and encourage collective problem solving and decision making (PMI, 2013b). Effective decision making is affected by factors such as time constraints, trust, quality, and acceptance. As a result, project managers have to tackle the problem by defining the problem, generating solutions, selecting and implementing a solution, and evaluating the outcome of the solution (PMI, 2013b).

A project manager's ability to influence stakeholders in a timely manner is crucial for the success of a project as project managers in a matrix environment usually do not have direct authority over team members (PMI, 2013b). Due to project managers operating in a global environment, a culturally diverse environment exists in most of the projects and hence a project manager is required to effectively manage this cultural diversity (PMI, 2013b). With the project environment subject to frequent changes, the project objectives have to be realigned with the change. Managing these changes effectively requires the project manager to put in effort towards continued team-building (PMI, 2013b). Effective team leadership requires the project manager to have trust building ability and stakeholder management ability (PMI, 2013b).

Overall, it is observed that PMBOK stresses on the following leadership competencies comprising of interpersonal skills that are essential for a project manager (PMI, 2013b, p.38):

- Ability to Lead
- Team Building (Change Management)
- Motivation

- Communication
- Influencing (Stakeholder Management)
- Effective Decision Making (Problem Solving)
- Political and Cultural Awareness
- Negotiation
- Trust Building
- Conflict Management
- Coaching

From the literature review above, we understand that project success is achieved through a project manager's leadership competencies. Organizations seek project managers possessing certain leadership competencies through job advertisements by signaling the leadership competency requirements. The next section discusses signaling theory, followed by recruiting project managers and job advertisements.

2.9 Signaling Theory: Recruiting Project Managers and Job Advertisements

2.9.1 Signaling Theory

At the time of hiring, employers can be unsure of an individual's productive capabilities. As a result, employers assess the capabilities through various combinations of signals depending on the prospective candidate's prior market experience (Spence, 1987). To deal with situations wherein an employer intercepts a weak signal and must rely on other means of information, Spence (1987) outlines a conceptual mechanism wherein the signaling power of education, job experience, and several observable personal characteristics can be determined. Signaling theory proposes that negative information or positive information when outlined by a signaler will be valuable to a recipient (Kirmani & Rao, 2000). The signal itself is critical, yet for the recipient to be of interest, the signal must hold compelling quality (Connelly, Certo, Ireland, & Reutzel, 2011). Recently, a study conducted by Yasar, Martin, and Kiessling (2020) aimed at supporting and extending the signaling theory due to information asymmetry. The findings of the study were in agreement with the signaling theory wherein recipients do respond to positive signals from a dependable insider signaler to forestall information asymmetry. At the same time, recipients react much substantially to negative signals (Yasar et al., 2020).

Signaling theory (Spence, 1973, 1974) suggests that in the absence of complete data individuals draw conclusions based on signs from the available information. Recruitment materials can be the primary source of information about the hiring organization for job applicants as the job applicants usually have limited knowledge about the organizations (Rynes & Miller, 1983). In a study (Gregory, Meade, & Thompson, 2013) conducted to examine the connections between internet recruitment and organizational attraction, 581 participants responded answered questions regarding the content and design of Fortune 500 company websites and observations were made on the resulting attitudes, perceptions, and organizational attraction. It was found that attitude toward the recruitment websites and consequently organizational attraction was influenced by the recruitment website's content and design.

In recruitment terms, how an organization signals about a job role to its potential applicants forms the origin of a relationship between two agents because prospective psychological contract starts with signals transmitted by means of websites or job advertisements (Rynes, 1991; Suazo, Martínez, & Sandoval, 2009). As recruitment starts with a single objective of identifying and attracting potential employees (Barber, 1998), job advertisements present a rewarding avenue for examining the signals made by organizations with regard to required competencies (De Cooman & Pepermans, 2012; Dineen & Williamson, 2012). In this context, a content analysis examining the signals given by organizations through job advertisements for recruiting HR professionals in New Zealand found that signals from organizations emphasized more on functional competencies rather than strategic competencies (Ho, Nguyen, Lo, McLean, & Teo, 2015).

One gap in the signaling research that examiners are persistently endeavoring to defeat is that of how perceived alternate signals may influence the core variable and the absence of multi-dimensional scales to gauge the numerous signals arising (Yasar et al., 2020). For example, while exploring the education level as a signal for an employer to hire an employee, Spence (1973) explains that multiple equilibria of the education model will translate into observable differences such as age, gender, etc. and into alterable differences such as level of education, certifications, etc. (Spence, 1973). However, current research aims at incorporating additional multi-dimensional scales suggesting that networks and connections are key to hiring individuals and not educational background (Tandon, Ertug, & Carnabuci, 2020).

Another gap in the study recommends that signaling is affected by temporality and that researchers have not been able to pick up slight differences over time (Drover, Wood, & Corbett, 2018). For

example, the entrepreneurship research proposes that a senior top management team and prominent board of directors will raise more capital for a new firm by instilling authenticity (Boyd, Bergh, & Ketchen Jr., 2010; Plummer, Allison, & Connelly, 2016), however, success is not signaled immediately by hiring these individuals and happens over time (Yasar et al., 2020). Signals have a time value component and it is proposed that the reason for past signaling research having mixed results are due to not including time (Dror & Aviad, 2014).

Although this literature is not directly relevant, it presents a theoretical basis for these studies.

2.9.2 Recruiting project managers and job advertisements

Recruitment acts as a medium for identifying potential candidates and enticing the candidates to fill existing vacancies (Chang & Chin, 2018). Depending on pre-hire and post-hire results such as the number of applicants for a role, the quality of applications for the role, the speed vacancies are filled, and performance of a candidate post hiring, recruiters use distinct recruitment methods such as online portals, social media, and printed recruitment advertisements (Fisher, McPhail, You, & Ash, 2014). These recruitment methods provide a medium of communication wherein recruiters can provide potential candidates with job-related information that are valuable and accurate (Muduli & Trivedi, 2020). Wei, Chang, Lin, and Liang (2016) identified online portals to be the recruitment method that was more preferred by recruiters as this mode is less expensive. Another advantage of recruitment websites or online portals is that it allows a lot of information about an organization, different jobs offered by the organization and insights into the organization culture (Allen, Mahto, & Otondo, 2007). When compared to other recruitment sources such as brochures and printed advertisements, it is reported that online websites or online portals present further detailed information regarding jobs (Cober, Brown, Keeping, & Levy, 2004).

Creating a strong application pool is critical for the success of an organization as the hiring is done from available job applicants and as the internet plays an important role in employee recruitment, it is vital to comprehend features and content of recruitment websites which in all likelihood attract several job applicants (Gregory et al., 2013). An important decision to be taken by a construction firm is to select the most suitable project manager for construction projects (Jazebi & Rashidi, 2013). Similarly, it is essential for all industries to select an ideal project manager. As a project manager is essential to a project, the selection of an ideal project manager possessing the right skills and criteria has attracted a lot of attention in the literature (Bedingfield & Thal, 2008).

There are several issues examined and weighted while selecting an ideal project manager, and as a result, it is essential to ensure that the chosen project manager has good balance with both knowledge and experience (Varajão & Cruz-Cunha, 2013). In the process of recruitment, it is of critical importance as to how organizations signal their requirements (Ahsan et al., 2013). The recruitment of a project manager from a pool of potential applicants is frequently made by the interview method alongside the thought of qualifications and experience according to the requirements of the project (Sharma & Kumar 2018). As project manager interviews are generally conducted by senior managers or key stakeholders of a project, multiple decision-makers are involved and a decision is arrived at through subjective judgement process (Sharma & Kumar 2018). This decision-making environment provides an opportunity to use desired project manager competencies as a selection criterion for recruiting project managers from a pool of potential applicants.

2.10 Summary

Projects are essential for an organization's growth and survival as they create value through enhanced business processes and are crucial in the development of new products and services, making it smooth for companies to respond to competition and environmental and marketplace changes. A project manager is expected to meet the cost objectives, schedule objectives, functionality objectives, and the quality objectives, and must ensure that the project is run efficiently. At the same time, project managers need to be familiar with the project management dynamics in order to be able to adequately manage the team members. Thus, the role of the project manager becomes more strategic.

Projects involve various geographically scattered but interdependent activities, suppliers, and stakeholders that are prone to distinct risks which can be of different types and different degrees. As these risks can have a possible negative influence on the project aspects such as cost and schedule, and consequently, project goals, it is essential for organizations to recruit an effective project manager.

Project management literature shows that the competencies of a project manager influences the performance and success of a project. Factors such as the requirements of the labour market, changing technologies, and organizational demands play a significant role in determining the role of a project manager and will continue to change accordingly. Competency frameworks envelopes identical competencies and present a practical path for integrating an organization's HR practices

across the life cycle of an employee, starting from their selection, through the employee's training and development, and eventually to their performance and appraisal. Even after various robust and effective project management studies, the project management field and project manager roles are undergoing constant change. The changing nature of the role and the field in itself provides an opportunity to identify new competencies sought after by industries. Effective project management requires a project manager to possess the following competencies – knowledge, performance, and personal. The leadership competencies of a project manager include interpersonal skills such as ability to lead, team building, motivation, communication, influencing, effective decision making, political and cultural awareness, negotiation, trust building, conflict management, and coaching.

In the process of recruitment, it is of critical importance as to how organizations signal their requirements. As project manager interviews are generally conducted by senior managers or key stakeholders of a project, multiple decision-makers are involved, and a decision is arrived at through subjective judgement process. This decision-making environment provides an opportunity to use desired project manager competencies as a selection criterion for recruiting project managers from a pool of potential applicants.

Considering the above, this study explores how Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers. The next chapter presents the research methodology used for this study.

CHAPTER 3.0: METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used for data collection and analysis in this study. The chapter commences with an overview of the research philosophy, followed by an overview of the research method, and a discussion on the content analysis method. This research employs content analysis to review job advertisements for the role of project manager in both Australia and New Zealand.

3.2 Research philosophy

In a strict sense, ontology is the rational study of being (Berryman, 2019). Basically, ontology describes what can be known (Crotty, 1998). The ontological perspective of this research is relativism. Relativism regards that reality is dynamic and there are several realities differing from context to context and from individual to individual (Gray, 2014). While relativism considers that the sense of existence is made by human consciousness, on the contrary, realism argues that the activity of the world is compelled by natural laws and exists independently from human perceptions.

Epistemology addresses questions regarding our understanding of reality – how one can make knowledge claims of any sort. Basically, epistemology is the study of knowledge (Byrne, 2017b). While there are a range of epistemologies, the major types are objectivism, constructionism, and subjectivism (Crotty, 1998). Objectivism implies that meaning and meaningful reality exists as such separated from the activity of any consciousness (Crotty, 1998). Constructionism hints at meaning coming into existence through human engagement with the realities in the world and there is no objective truth waiting to be discovered. There is no meaning without a mind (Crotty, 1998). Subjectivism refers to the meaning that is imposed by the subject on the object and the object by itself does contribute to the meaning (Crotty, 1998). This research incorporates subjectivism as the epistemological position, that is based on real world phenomena. Subjectivism adds to our comprehension of human subjectivity and psychology since it underscores the dynamic role that these play in generating behaviour (Given, 2008).

The ontology and epistemology collectively structure a philosophical establishment that underpins the research's paradigm (Scotland, 2012). In other words, ontological assumptions and

epistemological positions lay the foundations for aligning with a paradigm. Paradigm is a cluster of beliefs generally within a discipline guiding the preference of topic, in what way the research should be conducted, interpreted, and reported (Gray, 2014). There are four types of paradigm namely positivism, post positivism, interpretivism, and critical theory. Among these four types of paradigm, interpretivism and critical theory are linked with relativism ontology and subjectivism epistemology. Relativism and subjectivism give more consideration to deciphering research results rather than concentrating on objective facts (Gray, 2018). The interpretivist paradigm is one of subjectivism with reference to real world phenomena (Scotland, 2012). This research used interpretivism as its paradigm. The aim of interpretivism is to bring into awareness on hidden social powers and structures (Scotland, 2012). The meaning of social phenomena is explored and recognized by researchers through interpretivism, wherein the focus is greater on results of the research rather than focusing on objective facts (Wahyuni, 2012). As interpretivists primarily use interpretation and analysis to figure out various social phenomena, it can be understood that interpretive paradigms and qualitative methods are consistent with one another (Scotland, 2012).

3.3 Research Design

3.3.1 Data Collection

The data collected in this research were primary data. Primary data source relates to firsthand data collection for a certain purpose. There are several reasons why researchers use primary data source when conducting research such as primary data sources constituting the purest form of data are unfiltered, data that is aggregated may not serve the needs of certain research types as the data may not be sufficiently detailed, and the data may not provide the required information for current study (Flick, 2010). The primary data collection process asserts increased flexibility in focusing on the relevant research objectives as the quality of data collected influences any statistical processing. In other words, primary data collection allows greater control and consistency with the objectives of the research (Mazzocchi, 2008).

Data collection for this research (job advertisements for the role of project manager) was from April 2020 to May 2020. The data for this research was obtained from Seek Limited, an employment website. This research did not require an ethics approval as the data collection did not involve any participants and data was publicly available.

3.3.2 Sample Selection

In qualitative research, sampling can be generally explained as the selection of cases and additional sources of data (Gentles, Charles, Ploeg, & McKibbin, 2015). Criterion sampling was applied to this research for collecting sample data. Criterion sampling is a sampling strategy wherein based on the prime focus of the study, the sample is selected (Gray, 2014). The sample used in this research were job advertisements published between March 2020 and May 2020 for the role of project manager across Australia and New Zealand. In this time period, 100 job advertisements were collected. Of the 100 job advertisements collected for the role of project manager, 60 job advertisements are from Australia and 40 job advertisements are from New Zealand. The samples were obtained from Seek Limited (SEEK), an employment website. The sample included project manager job advertisements across various industries such as Information and Communication Technology, Construction, Government and Defense, Engineering, etc. and across both private and public sectors.

SEEK is the number one employment marketplace in both Australia and New Zealand (source: similarweb.com) having relationships with over 1.1 million hirers across the globe as of November 2019 (source: seek.com). As a result, SEEK was chosen as the recruitment website. The job advertisements were searched using the keyword "Project Manager" in the search terms. The same keyword was used in both the marketplaces – Australia and New Zealand. The project manager job advertisements selected were those that contained detailed and sophisticated description of requirements for the role. These job advertisements were published on the employment website (SEEK) between March 2020 and May 2020. There were only three criteria applied for selecting the sample – the job advertised had to be for the role of project manager, the job advertised had to be in the Australian or New Zealand marketplace, and the job is advertised between March 2020 to May 2020.

3.4 Content Analysis

Content analysis was used as a research technique in communication research during the 1900s to interpret the quantity (frequency) of content instead of quality (meaning) of content encompassed in textual data (H.-F. Hsieh & Shannon, 2018). Qualitative content analysis obtained popularity as a means to interpret data by finding common themes and formulating hidden meanings (H.-F. Hsieh & Shannon, 2018). Between 2005 and 2015, it is estimated that content analysis has been used as a qualitative analytic method in more than 3000 research studies in various fields such as business,

social science, economics, and so on (H.-F. Hsieh & Shannon, 2018). With the qualitative content analysis mainly focusing on description, it is not suitable for theory building and is considered as a method that reduces data (Schreier, 2014).

Content analysis refers to a process wherein any form of communication can be subjected to a process of counting that is based on the frequency of words or phrases (Byrne, 2017a). In other words, certain keywords or phrases can be employed in searching large amount of text and thereby leading to the recognition of textual components and serving as a basis for calculating the frequency of occurrence. Content analysis is considered as a valuable research method due to its advantages in data collection and analyzing quality data (Maier, 2017). Content analysis research method characterizes communicative messages and does not draw cause-and-effect conclusions. Content analysis can treat unstructured subject as data and can be used in analyzing small samples of text (Krippendorff, 2004). This study employs content analysis research method as the research involves counting the type and frequency of leadership competencies sought after by employees. At the same time, the research involves analyzing only 100 job advertisements and the requirements specified in these job advertisements does not have to be structured.

The content analysis research method can be used in either qualitative or quantitative research for the standardized reduction and interpretation of texts, with an objective of describing data as an abstract interpretation (H.-F. Hsieh & Shannon, 2018). The quantitative content analysis is generally used to test hypotheses and the qualitative content analysis is generally used to present a detailed explanation of the material under analysis (Schreier, 2014). The data for content analysis can be spawned from a range of sources such as interviews (individual or focus group), printed materials, social media texts, etc. (H.-F. Hsieh & Shannon, 2018). This research employs the qualitative content analysis as the research aims to present an explanation of the project manager job advertisements analyzed.

In content analysis, there are three approaches for interpreting meaning from the content of text data – conventional content analysis, directed content analysis, and summative content analysis (H. Hsieh & Shannon, 2005). This research employs the directed content analysis approach. In the directed content analysis approach, key concepts or variables are identified as initial coding categories using existing theory or prior research (Potter & Levine-Donnerstein, 1999). Conceptually validating or extending a theoretical framework or theory is the objective of the directed content analysis approach (H. Hsieh & Shannon, 2005). Supporting or contradicting evidence for a theory can be obtained

through the findings from a directed content analysis (H. Hsieh & Shannon, 2005). This research captures competency related keywords from job advertisements under the Knowledge, Skills and Abilities (KSA) classification with an objective of comparing the competencies identified through data collection with the competencies identified in the literature (Ahsan et al., 2013).

This research adopted the frequency approach to coding, which means data is coded in terms of frequencies and eventually breakdown to existence (Kathleen, 1993). Past studies have analyzed job advertisements in a similar manner (Brooks, Greer, & Morris, 2018; Hartnett, 2014; Kaba, 2017; Skene, 2018).

Of interest to this study, Ahsan et al., (2013) used content analysis to review job advertisements in the Australian and New Zealand market found in both print and online media and analyzed project management roles and requirements from an employer's perspective. The authors utilized a project management literature review to identify desirable variable keywords with respect to the competencies of a project manager. Based on the frequency of citation in job advertisement, the top three competencies of a project manager identified were communication, technical skills, and stakeholder management. However, based on the frequency of citation in project management literature, the top three competencies of a project manager were leadership, communication, and technical skills.

The following section discusses the research method of this study.

3.4.1 Content Analysis Steps

Determining the relevance and emphasis of project manager competencies from job advertisements, the study utilizes qualitative technique and focuses on content analysis method as a research tool. The following steps are used: (1) developing KSA classification (2) categorizing leadership competencies (3) determining job advertisement website (4) sample data collection and variable modification (5) reviewing job advertisement content and recording frequency of pertinent items. Figure 2 illustrates the content analysis steps for this research.

STEP 1: Development of KSA classification

PMBOK indicates that along with general management expertise and area-specific skills, a project manager must possess the following competencies for effective project management – knowledge competency, performance competency, and personal competency. Knowledge competency refers to

a project manager's knowledge about project management and this can be gauged by their educational background which includes a relevant degree, project management certifications, and knowledge of MS Project and its application. The performance competency refers to a project manager's accomplishment through the application of project management knowledge. The performance competency can be gauged by the project manager's ability to manage time, cost, and risk related activities of a project along with communication skills and stakeholder management skills. The personal competency refers to the project manager's attitude towards project related activities and includes inter-personal skills such as leadership, team building, coaching, motivation, influencing, etc. (PMI, 2017a). In this study, we identify the three competencies stated in PMBOK – Knowledge, Performance, and Personal. These competencies are then classified under one of the three sections – knowledge, skills, or abilities (KSA).

STEP 2: Categorizing leadership competencies

From the literature review, it is understood that competency is a combination of related knowledge, skills, and personal characteristics. The knowledge section captures competencies such as educational background, project management certification, and industry related requirement such as awareness of health and safety procedures. The skills section captures competencies related to the application of project management knowledge such as stakeholder management, communication, time and cost management, etc. The ability section captures competencies related to personal characteristics of an individual such as problem-solving ability, mentoring ability, etc.

STEP 3: Determining Job Advertisement Website

Job advertisements are published both in print media and online media. Print media comprises of newspapers and magazines, whereas, online media comprises of social networking websites, company career webpages, recruiter websites and online job boards (Ahsan et al., 2013). This study utilizes online job boards for viewing job advertisements because most of the employers prefer posting vacancies online to attract wider population. Online job boards can be navigated at ease and locating specific job advertisements is simple. At the same time, online job boards have jobs categorized based on factors such as country, position role and industry.

SEEK is the number one employment marketplace in both Australia and New Zealand wherein individuals can find jobs and career related information and organizations can recruit the ideal candidate. In the year 2020, between January to June, SEEK Australia had an average of 18.5 million visitors each month and SEEK New Zealand had an average of 3.1 million visitors each month (Source:

similarweb.com). Thus, SEEK was identified to be a potential source of job advertisements for this study. Due to the possibility of duplicate advertisements published on several online job portals, the study considers reviewing job advertisements from one online job portal only.

STEP 4: Sample Data Collection and Variable Modification

In the first phase of data collection, 20 job advertisements were analyzed to identify and merge key KSA variables. Merging the key KSA variables helps to avoid recording potential duplicates. For example, one job advertisement may indicate stakeholder management as a competency requirement and another job advertisement might indicate interacting with team members, suppliers, and customers as a competency requirement. Rather than recording these requirements separately under different titles, they are merged and recorded under one title. The job advertisements that were reviewed were from different industries across Australia and New Zealand. The process of identifying and merging key KSA variables helped in the addition of new variables different from the literature such as MS Project, health and safety, and change management. Variables considered similar in meaning were merged as they did not warrant to be separate.

STEP 5: Reviewing Job Advertisement Content and Recording Frequency of Pertinent Items

The content analysis in this study was performed manually and there was no content analysis software used. Job advertisements for the role of project manager were collected from April 2020 to May 2020. Each job advertisement was entered into MS Excel and data was captured under four columns – competency sought, role, offered benefits and salary, and project manager job sector/country/advertiser. The competency sought section captured KSA attributes as well as other competency requirements. The sub-section ‘other requirements’ was included to identify competency requirements different from the standard KSA variables and to capture its frequency of occurrence. The role section captures the job title displayed in the job advertisements as few companies may have specific job titles such as digital project manager, civil project manager, site project manager, or sprinkler project manager. The offered benefits and salary section capture information related to salary being offered and benefits such as relocation allowances. The project manager job sector/country/advertiser section identified the sector and country where the job was advertised and the company that advertised the job vacancy.

In order to ensure there is no duplicate job advertisement being recorded, the advertiser section was reviewed to identify if more than one job advertisement was recorded under the same company

name. Each job entry was reviewed and the frequency of re-occurring KSA variables was recorded manually. Figure 2 illustrates the content analysis steps used in this study.

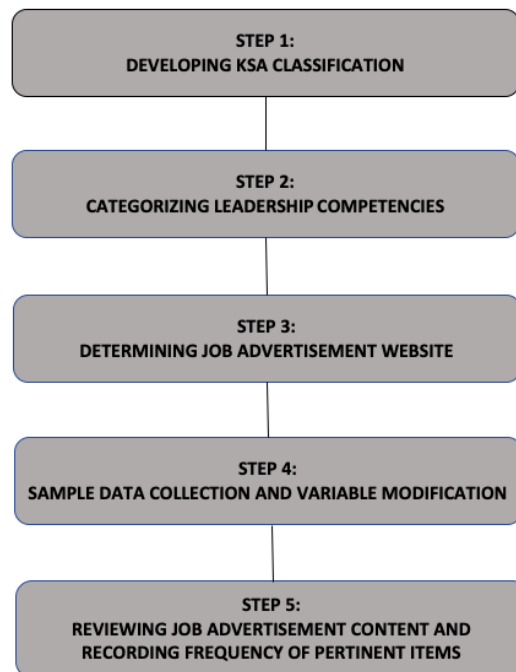


Figure 2. Content Analysis Steps

3.5 Reliability and Validity

In order to maintain rigor, the competencies developed by PMBOK were captured in this research by reviewing of project manager job advertisements. PMBOK's explanation of project manager knowledge, performance, and personal competences were used as a baseline to identify competencies from the job advertisements.

3.6 Summary

This chapter presented the research methodology used for data collection and analysis in this study. The ontological perspective of this research is relativism, incorporates subjectivism as the epistemological position, and interpretivism as its paradigm. Data collection for this research (job advertisements for the role of project manager) was from April 2020 to May 2020. The data for this research was obtained from Seek Limited, an employment website. Criterion sampling was applied to

this research and qualitative content analysis as the research method to analyze data. This research employs the directed content analysis approach and adopted the frequency approach to coding. The chapter also discussed the content analysis steps. The next chapter presents the results and analysis of this research.

CHAPTER 4: RESULTS AND ANALYSIS

4.1 Introduction

This chapter discusses the findings of this study. The findings analyze 100 job advertisements across Australia and New Zealand for the role of project manager. The analysis presents an overview of the job title distribution followed by a comparison of competencies across countries, project industries, and sectors. The findings are analyzed under KSA classification wherein competencies that have a frequency of more than 10% are captured under each classification. Finally, an analysis of the overall competencies is presented.

4.2 Job Title

The job advertisements identify the job title as project manager, 94%; digital project manager, 3%; civil project manager, 1%; site project manager, 1%; and sprinkler project manager, 1%. The jobs are from industries such as construction (41%), information & communication technology (32%), engineering (5%), government & defense (4%), banking & financial services (3%), mining, resources & energy (3%), trades & services (3%), and others. In the following subsections, job advertisements are analyzed to determine key KSAs, across countries and industries. Graphical illustrations of the analysis across countries and industries are shown in figure 3 and figure 4 respectively. See Table 1 for job title distribution across countries.

Table 1: Job Titles Reviewed

ROLE	NUMBER OF ADS IN NZ	NUMBER OF ADS IN AUSTRALIA	TOTAL ADS
Project Manager	35	59	94
Digital Project Manager	3	-	3
Civil Project Manager	1	-	1
Site Project Manager	-	1	1
Sprinkler Project Manager	1	-	1
GRAND TOTAL	40	60	100

4.3. KSA comparison

4.3.1 KSAs Under Country Category

Of the 100 job advertisements collected, 60 job advertisements were from the Australian market (60%) and 40 job advertisements were from New Zealand market (40%). Job advertisements were analyzed to determine country specific competency requirements. The top 10 KSAs are common for both Australian and New Zealand marketplaces. Stakeholder management skills (82.5% in New Zealand; 66.7% in Australia) and communication skills (57.5% in New Zealand; 55% in Australia) are

the most popular KSAs in both the countries. Problem solving competency is equally emphasized in both the markets. New Zealand job advertisements are more concerned about time and cost management than the Australian market. Australian job advertisements are more concerned about project management certification and ability to lead when compared to that of New Zealand market. The remaining KSAs such as time management, MS Project, cost management, change management, and educational background have been cited more frequently in New Zealand job advertisements than the Australian job advertisements. Figure 3 shows the distribution of top 10 KSAs in both Australia and New Zealand.

4.3.2 KSAs Under Project Industry Category

The majority of the job advertisement data are from Construction industry (41%) and the Information & Communication Technology industry (32%). The remaining job advertisements are distributed across industries such as Engineering (5%), Government & Defense (4%), Banking & Financial Services (3%), Mining, Resources and Energy (3%), Trades and Services (3%), Consulting and Strategy (2%), Healthcare and Medical (2%). Industries such as Design and Architecture, Human Resources and Recruitment, Insurance and Superannuation, Marketing and Communications, and Retail and Consumer products contribute 1% each to the job advertisement data. The average number of KSAs sought after in the top 4 industries of this data collection were analyzed. Although Government and Defense sector had a short sample of 4 job advertisements, analysis show that the Government & Defense sector sought the highest number of KSA requirements per job advertisement (7), followed by Information & Communication Technology (5.4), Engineering (5.2), and Construction (4.8). A comparison was also made between top 10 KSAs identified in this data collection with the top 4 industries. Government & Defense sector sought the highest number of top 10 KSAs (3.75), followed by Information & Communication Technology (3.41), Construction (3.15), and Engineering (2.6). Of the top 10 KSAs, cost management was one of the competency requirements in Construction and Information & Communication Technology sector. Time management was not one of the competency requirements in the Government & Defense sector and change management was not one of the competency requirements in Engineering sector. All other KSAs were cited as a competency requirement across all the 4 industries.

The top 4 industries of this data collection and the top 4 KSAs for respective industries were compared. It is seen that stakeholder management (73%) is present in all 4 industries under one of the top 2 requirements, and communication skill (56%) requirement is present across all 4 industries. Relevant educational background or qualification (48%) and ability to lead projects or team (32%) are present

across 3 industries. A professional project management certification (17%) and change management skills (24%) are emphasized more in the information & communication technology sector. See Table 2 for top 4 sought after KSAs across top 4 project industries.

Table 2: Top 4 sought after KSAs for the top 4 project industries

Construction	Information & Communication Technology	Engineering	Government & Defense
Education	Stakeholder management	Education	Stakeholder management
Stakeholder management	Communication	Stakeholder management	Education
Communication	Change management	Ability to Lead	Communication
Ability to Lead	Certification	Communication	Ability to Lead

Overall, it was found that, across industries, the most sought-after competency requirements or KSAs are stakeholder management, communication, education, and ability to lead. The priority in which KSAs are sought-after, differ with each industry. For example, the importance of problem-solving ability is different for different industries. Across industries, 50% government & defense, 20% engineering, 19.51% construction, and 12.5% information & communication technology projects require project managers to possess strong problem-solving competency. Figure 4 shows the KSAs demanded across industries.

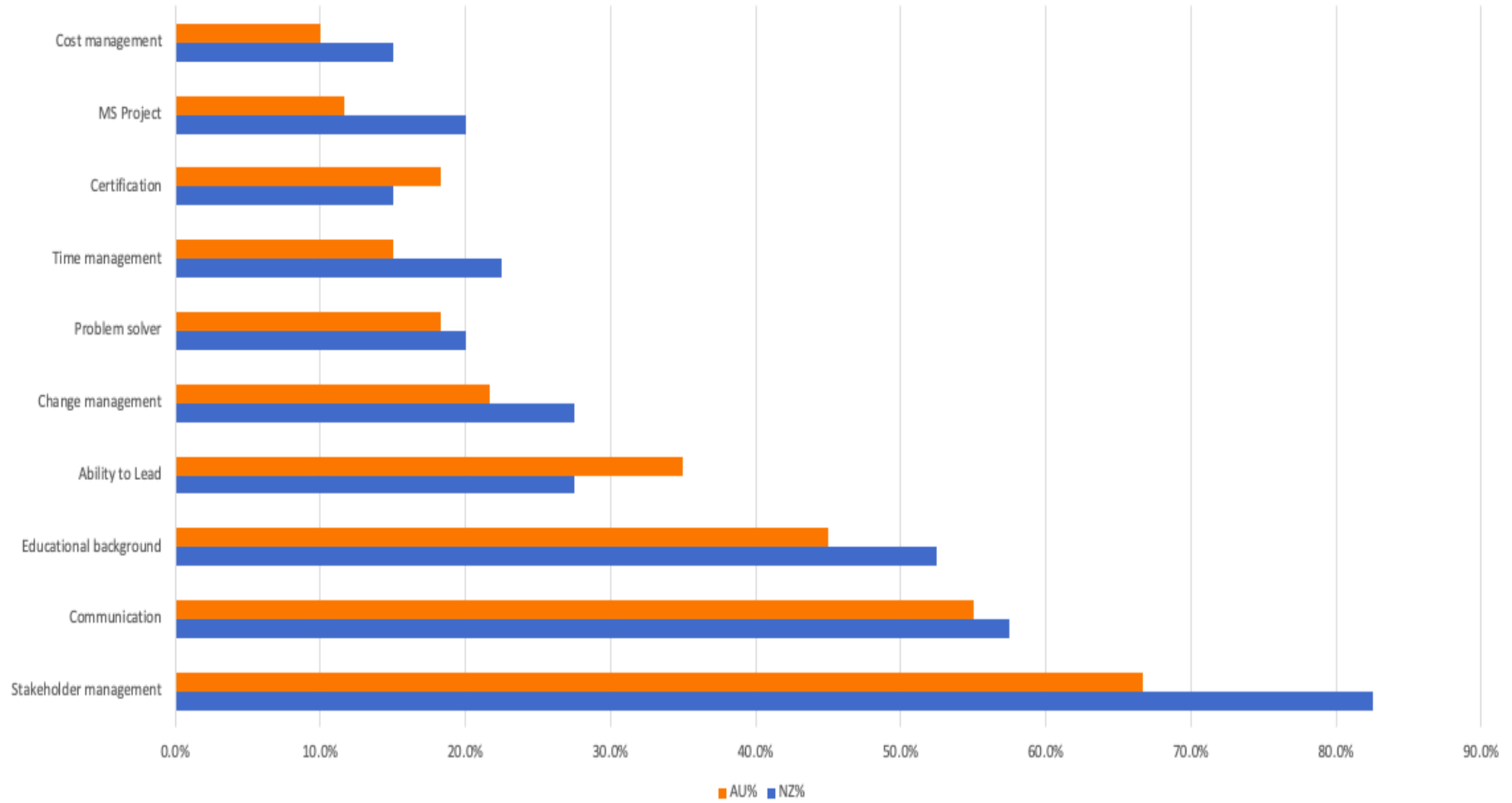


Figure 3: Australia and New Zealand project manager KSAs comparison

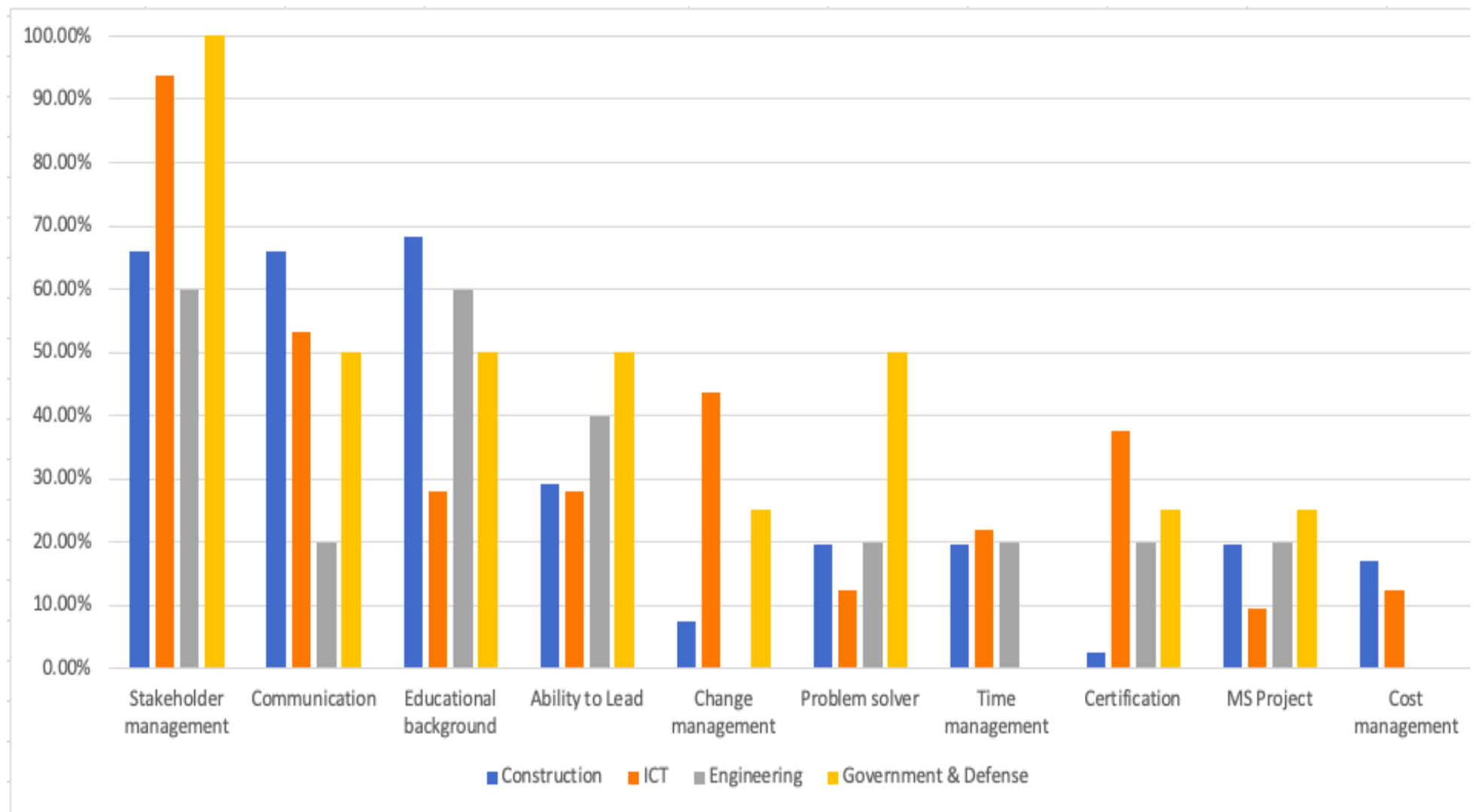


Figure 4: KSAs demanded in different project industries

4.3.3 KSAs Under Sector Category

The job advertisement data consisted of 92 jobs from private sector (55 jobs from Australia and 37 jobs from New Zealand) and 8 jobs from public sector (5 jobs from Australia and 3 jobs from New Zealand). The top 5 sought after KSAs in each sector was analyzed. Analysis show that the top 5 sought after KSAs in the private sector are stakeholder management (70.65%), communication (56.52%), educational background (48.91%), ability to lead (30.43%), and change management (23.91%). The top 5 sought after KSAs in the public sector are stakeholder management (100%), communication (50%), ability to lead (50%), educational background (37.5%), and time management (37.5%). It is seen that stakeholder management and communication skills are the top 2 sought after KSAs in both public and private sectors. The emphasis on time management competency is more in public sector when compared to that in private sector. See Table 3 for KSA comparison in public and private sector.

Table 3: KSA comparison in public and private sector

Competency	Public Sector	Private Sector
Stakeholder management	100%	70.65%
Communication	50%	56.52%
Educational background	37.50%	48.91%
Ability to Lead	50%	30.43%
Time management	37.50%	16.30%
Change management	25%	23.91%

4.4 Job Advertisement KSAs

Job advertisement data is analyzed under KSA classifications. Results indicate that under the knowledge category, educational background (48%) is the most cited knowledge competency, followed by project management certification (17%), and establishes that many employers are seeking a project manager with a tertiary or trade background. For example, in government & defense project manager role, candidates with a civil engineering degree are sought after. Analysis also indicates that several employers are seeking project managers with certifications in Project Management Professional (PMP) credential from PMI or PRINCE2 from the United Kingdom.

The role of a project manager is to be able to manage projects from its inception to completion and hence skills relating to management is of utmost importance for the success of the project. Analysis show that employers are looking for project managers with excellent stakeholder management (73%) skills. Stakeholder management covers the managing of both internal and external clients of an organization. Communication skills was identified as the second most sought after competency (56%).

Employers are looking for project managers possessing excellent verbal and written communication skills and is able to communicate at all levels within the organization.

Under the “abilities” category, the ability of a project manager to lead a project/team (32%) and problem-solving ability (19%) are the most cited competencies sought after by employers. Table 4 highlights job advertisement frequencies under KSA categories and subcategories.

Table 4: KSAs from job advertisements with more than 10% frequency

KNOWLEDGE	ADVERTISEMENT (%)	SKILL	ADVERTISEMENT (%)	ABILITY	ADVERTISEMENT (%)
Educational background	48%	Stakeholder management	73%	Ability to Lead	32%
Certification	17%	Communication	56%	Problem solver	19%
MS Project	15%	Change management	24%	Mentor	11%
Health and Safety	10%	Time management	18%	Positive 'can do' attitude	10%
		Cost management	12%		
		Risk management	10%		

4.5 Overall leadership competencies

Analysis show that stakeholder management is the most sought-after competency required of a project manager. An average of 73% of all job advertisements are seeking good stakeholder management skills from project managers. Communication skills (in English) is the second most sought-after competency in a project manager (56%), followed by relevant educational background (48%), ability to lead (32%), and change management skills (24%). Communication skills involves the ability to communicate with internal stakeholders (for example: board of directors, executive managers, operations teams) and external stakeholders (for example: customers, government, investors and creditors) and the ability to communicate at all levels within an organization, from the CEO down to those workers in the bottom echelons (for example, labourer). Educational background involves a tertiary or degree qualification in a discipline relevant to the job industry (for example, a project manager in a construction company requires a qualification in civil engineering or construction management). Employers are seeking project managers who have the ability to lead the team by keeping the team motivated and on-task throughout the length of the project and mentor individual members when required. With businesses trying to keep up with the fast-paced change environment, employers are seeking change management as one of the key competencies of a project manager. Moran and Brightman (2001) defines change management as “the process of continually renewing an organization’s direction, structure, and capabilities to serve the ever-changing needs of external and internal customer” (Moran & Brightman, 2001). Change management skills includes the ability to transition ideas, efforts, and activities smoothly but ensuring the end goal of the project is met.

Thus, the top ten KSAs sought after by employers are stakeholder management (73%), communication (56%), educational background (48%), ability to lead (32%), change management (24%), problem solver (19%), time management (18%), project management certification (17%), MS Project (15%), and cost management (12%). See Table 5 for summary of the top ranking KSAs for project managers.

Table 5: Top 10 KSAs across industries and countries

COMPETENCY	ADVERTISEMENT (%)
Stakeholder management	73%
Communication	56%
Educational background	48%
Ability to Lead	32%
Change management	24%
Problem solver	19%
Time management	18%
Certification	17%
MS Project	15%
Cost management	12%

By categorizing these KSAs across project manager general competencies, it is seen that performance competence holds the top spot with a total of 127 citations, followed by personal competence with 107 citations, and knowledge competence with a total of 80 citations. Overall, it is observed that the project manager KSAs advertised match with the project manager general competencies in PMBOK. See Table 6 for the top 10 KSA distribution across project manager general competencies.

Table 6: Top 10 KSA distribution across project manager general competencies

Knowledge	Performance	Personal
Educational Background	Stakeholder Management	Communication
Certification	Time Management	Ability to Lead
MS Project	Cost Management	Problem Solver
	Change Management	

Overall, the project manager job advertisement analysis indicates the top five leadership competencies as follows (in order of rank from highest to lowest based on number of citations in job ads):

- Influencing (Stakeholder Management)
- Communication
- Ability to Lead
- Team Building (Change Management)
- Effective Decision Making (Problem Solving)

4.6 Summary

Of the 100 job advertisements collected, 60 job advertisements were from the Australian market (60%) and 40 job advertisements were from New Zealand market (40%). Across industries, the most sought-after competency requirements or KSAs are stakeholder management, communication, education, and ability to lead. Across sectors, the most sought-after competency requirements or KSAs are stakeholder management, communication, ability to lead, educational background, and time management. Although the top 10 KSAs are common for both Australian and New Zealand marketplaces, New Zealand recruiters are more concerned about time and cost management than the Australian market and Australian recruiters are more concerned about project management certification and leadership skills when compared to that of New Zealand market. The top ten KSAs sought after by employers are stakeholder management, communication, educational background, ability to lead, change management, problem solver, time management, project management certification, MS Project, and cost management. General competences when ranked based on citations in job advertisements show that performance competence is the most sought-after competence, followed by personal competence, and knowledge competence. The top 5 leadership competencies are influencing (stakeholder management), communication, ability to lead, team building (change management), and problem solving. Overall, it is observed that the project manager leadership competencies advertised match with the project manager leadership competencies in PMBOK. The next chapter discusses the data analysis, findings, and discussion of the findings with respect to project management literature.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter discusses the findings of this research, compares the findings to relevant literature, and discusses similarities and differences. The analysis of project manager job advertisements has helped in identifying the distribution of top skills across PMBOK general competencies and identifying key leadership competencies required for a project manager in both Australia and New Zealand. The findings of this research help understanding how Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers. These findings are discussed in the following sub-sections.

The discussion addresses the research question: *How do Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers?* Despite the importance of selecting the right project manager, prior research on how organizations signal the leadership competency requirements is rare. Advancing in the Project Management field requires this gap to be filled. Examining the recruitment of project managers from job advertisements can help fill this gap.

5.2 Implications for Project Manager and Project Manager Roles

Through analysis of the Project Manager job advertisement data, we see job titles reflecting variety of roles for a project manager. The job titles include Project Manager, Digital Project Manager, Civil Project Manager, Site Project Manager, and Sprinkler Project Manager. Job titles were more specific to the role in New Zealand market when compared to Australian market. Depending on the industry type and requirements of an organization, the role of a project manager varied across industries and countries. Factors such as the requirements of the labour market, changing technologies, and organizational demands play a significant role in determining the role of a project manager and will continue to change accordingly (Ahsan et al., 2013). Thus, the findings of this research support the literature on the changing roles of a project manager.

This study revealed educational background as one of the key competency requirements for a project manager. When KSAs were ranked based on the number of citations in job advertisements, educational background was identified as the third most important KSA sought after by employers.

48% of the recruiters required the potential project manager to have an educational background related to project management or in a field relevant to the job role (for example, construction project manager required an educational background in project management or civil engineering). The ranking of educational background is identical in both Australia and New Zealand, with educational background being the third most important KSA sought after by recruiters in both the countries. At the same time, an accredited project management certification was identified as the eighth most important KSA among the top ten KSAs. 17% of the recruiters sought after project managers with an accredited project management certification. Project management certifications were sought after more frequently in the Australian market (18.3%) when compared to that of New Zealand (15%). Project managers need to be familiar with the project management dynamics in order to be able to adequately manage the team members (Cesarotti et al., 2019). A project manager has to be familiar with the knowledge areas listed in PMBOK such as project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project communication management, project risk management, project procurement management, and project stakeholder management (PMI, 2013b). Thus, the findings of this research support the literature on knowledge area for a project manager.

Analysis show that time management and cost management skills were among the top ten KSAs sought after by employers for the role of project manager. While 18% of the recruiters required project managers to have time management skills, 12% of the recruiters required project managers to possess cost management skills. Interestingly, both time management skills and cost management skills were sought after by recruiters more frequently in the New Zealand market – 22.5% and 15% respectively, when compared to Australian market – 15% and 10% respectively. However, both time management and cost management skills appeared in the top ten sought after KSAs in both the countries. A project manager is considered to be the individual responsible for the completion of a project within a set time and budget, and deliver the required quality or performance standards (Sommerville et al., 2010). A project manager is expected to meet the cost objectives, schedule objectives, functionality objectives, and the quality objectives, and must ensure that the project is run efficiently (Heerkens, 2002). Therefore, the findings of this research support the literature on project manager roles.

5.3 Implications for Competencies

Our analysis show that the top ten sought after KSAs by recruiters for the Project Manager role are distributed across all three general project manager competences suggested by PMBOK. By categorizing these KSAs across project manager general competencies, it is seen that performance competence holds the top spot with a total of 127 citations (includes 4 KSAs – stakeholder management, time management, cost management, and change management), followed by personal competence with 107 citations (includes 3 KSAs – communication, ability to lead, and problem solving), and knowledge competence with a total of 80 citations (includes 3 KSAs – educational background, accredited project management certification, and knowledge of MS Project and its application).

Along with general management expertise and area-specific skills, a project manager must possess competencies such as knowledge, performance, and personal competence for effective project management (PMI, 2013b). Knowledge competency refers to a project manager's knowledge about project management (PMI, 2013b). The performance competency refers to a project manager's accomplishment through the application of project management knowledge. (PMI, 2013b). The personal competency refers to the project manager's attitude towards project related activities and includes inter-personal skills such as communication, ability to lead, team building, coaching, motivation, influencing, etc. (PMI, 2017a). Thus, the findings of this research support the project manager general competencies stated in PMBOK.

This study has extended the previous research (Ahsan et al., 2013) by identifying current major KSAs and the utilization of these competencies through industry signals. In the study conducted by Ahsan, et al., (2013), the top five sought after KSAs did not feature a competency in the knowledge category and the abilities category. The skills category had all the top five KSAs comprising of competencies such as communications, technical skills, stakeholder management, time management, and cost management. The top two competencies within the knowledge category were educational background and project management certification. Within the abilities category, result oriented project manager was the highly demanded KSA. However, after 7 years, the analysis in this study show change management skills, educational background and the ability to lead have replaced technical skills, time management, and cost management as highly sought after KSAs within the Australasian region. Change management is highly important and therefore “leading change” is an important competency for leadership in a project manager. With the project environment subject to frequent

changes, the project objectives have to be realigned with the change (PMI, 2013b). Managing these changes effectively requires the project manager to put in effort towards continued team-building (PMI, 2013b). Technical skills have changed to qualifications showing that the project manager role has become more professionalized. Springer (2013) points out it is difficult to appreciate the cross-discipline nature of project management. The need for prior work experience is recognized through the emergence of several master's level degrees in project management, many of which move beyond the operational elements to include discussions on topics such as management, leadership, and risk management (Springer, 2013).

Although communication and stakeholder management remain in the top five sought after KSAs, this study reveals that stakeholder management is ranked above communication skills when compared to the previous study where communication skills was ranked above stakeholder management. Result oriented project manager was not among the top KSAs identified in this study. In general, there exists similarities among project manager competencies (KSAs) identified in previous research, project manager competencies frequently cited in project management literature, and the findings of this study by analyzing job advertisements. However, there are subtle differences in the top sought after competencies and this is changing with time. While the results of this study highlights the common competencies vital across industries and countries (such as stakeholder management and communication), the results of this study also highlights that the vital competencies can also vary across industries and countries. These differences can be dependent on the role of the project manager in the industry and market demands. Thus, this study supports the suggestion that industry variations of project manager competencies require serious attention (Ahsan et al., 2013).

5.4 Implications for Leadership Competencies

The analysis of the Project Manager job advertisements identifies the top five leadership competencies sought after by recruiters as influencing (stakeholder management), 73%; communication, 56%; ability to lead, 32%; team building (change management), 24%; and effective decision making (problem solving), 19%. All the five leadership competencies are present in the top ten KSAs in both Australia and New Zealand and are ranked in the same order. In Australian market, all the top five leadership competencies form the top six KSAs sought after by recruiters, whereas in the New Zealand market, all the top five leadership competencies form the top seven KSAs sought after by recruiters.

Decision-making and establishing trust among project team members and stakeholders are crucial leadership competences of a project manager (Ahmed & Anantatmula, 2017), and the performance of a project is influenced by trust (Brewer & Strahorn, 2012). Communication capabilities of a project manager is pivotal for a project's success as it requires project managers to communicate expectations and ensure clarity in communication among project team members and project stakeholders (Ahmed & Anantatmula, 2017). In order to manage a project team and establish high-performing teams, a project manager must possess a range of interpersonal skills with special focus on communication, conflict management, negotiation, influencing, coaching, effective decision making and ability to lead (PMI, 2013b). High team performance can be achieved when project managers use open and effective communication, manage conflicts in a constructive manner, and encourage collective problem solving and decision making (PMI, 2013b). A project manager's ability to influence stakeholders in a timely manner is crucial for the success of a project as project managers in a matrix environment usually do not have direct authority over team members (PMI, 2013b). With the project environment subject to frequent changes, the project objectives have to be realigned with the change. Managing these changes effectively requires the project manager to put in effort towards continued team-building (PMI, 2013b). Therefore, the findings of this study support the project manager leadership competencies described in PMBOK. It is also observed that the project manager leadership competencies described in PMBOK are an adequate reflection of leadership theories and studies (Dulewicz & Higgs, 2005; Gehring, 2007; Podgórska & Pichlak, 2019).

Although the project manager leadership competencies described in PMBOK comprises of eleven interpersonal skills, the analysis found only five of these leadership competencies among the top ten sought after KSAs. Interestingly, the job advertisements reviewed in this study did not come across one PMBOK leadership competency - political and cultural awareness, from among the eleven PMBOK leadership competencies. This may be because recruiters assume that the leadership competencies such as influencing, ability to lead, and team building address the political and cultural awareness requirement. PMBOK can view this as an opportunity to develop its leadership competency requirements for the future by exploring how political and cultural awareness in a project manager can be gauged or by merging the political and cultural awareness leadership competency with other existing leadership competencies.

5.5 Implications for Signaling Theory

In recruitment terms, how an organization signals about a job role to its potential applicants forms the origin of a relationship between two agents because prospective psychological contract starts with signals transmitted by means of websites or job advertisements (Rynes, 1991; Suazo et al., 2009). As recruitment starts with a single objective of identifying and attracting potential employees (Barber, 1998), job advertisements present a rewarding avenue for examining the signals made by organizations with regard to required competencies (De Cooman & Pepermans, 2012; Dineen & Williamson, 2012). Signaling theory (Spence, 1973, 1974) suggests that in the absence of complete data individuals draw conclusions based on signs from the available information. The results have identified the signals made by recruiters with respect to required leadership competencies. Across job advertisements in both Australia and New Zealand, the leadership competencies such as influencing, team building, and effective decision making are represented through abilities such as stakeholder management, change management, and problem solving respectively. The findings of this research suggest that while describing project manager leadership competency requirements, recruiters need to ensure that they provide detailed information of these competency requirements in order to deter applicants from drawing conclusions based on available information.

Results indicate that organizations are signaling leadership competencies clearly through job advertisements. However, for recruiting project managers, organizations do have an opportunity to adequately signal these leadership competency requirements. For example, some job advertisements have these leadership competency requirements mentioned in the role description section. By describing the leadership competency requirements in a separate section, applicants can evaluate for themselves what the role and the requirements entail more clearly.

Overall, results show that PMBOK is able to disseminate the leadership competencies to industries. However, it was noticed that very few job advertisements had conflict management and coaching as a leadership competency requirement. More leadership development from theories or studies can help improve the signal PMBOK sends to industries.

5.6 Practical Implications

As online job advertisement plays an important role in recruitment, the Human Resources (HR) team of an organization would be benefited by this research. The HR teams can compare the project manager role description designed by them with the findings of this study and make effective changes to their leadership competency signals. The study recommends that leadership competency requirements be described clearly in a separate section rather than mixing them up with the role description. Training the HR team through exercises in developing effective job advertisement content can help in adequately describing the leadership competency requirements.

Potential project managers can benefit from this study by identifying key leadership competencies and key general competencies that requires to be developed for the role. This study can help potential project managers to interpret the leadership competency signals made by organizations. The study also provides an opportunity for future project managers to display and develop these leadership competencies in their current role and gain strong experience with respect to the competency requirements.

Project Management Institute (PMI) can explore the study in this area to review their terminologies and description of the project manager leadership competencies and include in-depth information to help avoid researchers, recruiters, and potential project managers from making generalized perceptions about project manager leadership terminologies.

5.7 Limitations and Future Research

The first limitation of this research is the limited time span covered by the data. The data collection period was limited to three months between March 2020 and May 2020. The second limitation is that the number of job advertisements posted online during this period were few due to the COVID-19 pandemic. Future research can examine job advertisements over a longer time frame (for example, more than 6 months) and during the absence of any pandemic. This may help in identifying additional project manager leadership competencies advertised by recruiters and determine whether the project manager leadership competency requirements vary with time.

5.8 Conclusion

The purpose of this dissertation was to address the following question:

How do Australian and New Zealand organizations signal the required leadership competencies as promoted by the PMBOK for project managers?

According to the content analysis of 100 job advertisements across Australia and New Zealand for the role of project manager, the top 10 KSAs are common for both Australian and New Zealand marketplaces. Stakeholder management skills and communication skills are the most popular KSAs in both the countries. While New Zealand recruiters are more concerned about time and cost management than the Australian market, Australian recruiters are more concerned about project management certification and ability to lead when compared to that of New Zealand market.

The top ten KSAs sought after by employers are stakeholder management, communication, educational background, ability to lead, change management, problem solver, time management, project management certification, MS Project, and cost management. By categorizing these KSAs across project manager general competencies, it is observed that the project manager KSAs advertised match with the project manager general competencies in PMBOK.

The top five leadership competencies are influencing (stakeholder management), communication, ability to lead, team building (change management), and problem solving. Overall, it is observed that the project manager leadership competencies advertised match with the project manager leadership competencies in PMBOK.

Across job advertisements in both Australia and New Zealand, the leadership competencies such as influencing, team building, and effective decision making are represented through abilities such as stakeholder management, change management, and problem solving respectively. The findings of this research suggest that while describing project manager leadership competency requirements, recruiters need to ensure that they provide detailed information of these competency requirements in order to deter applicants from drawing conclusions based on available information.

The study has two limitations - limited time span covered by the data, and a smaller number of job advertisements due to COVID-19 pandemic. Future research can examine job advertisements over a longer time frame (for example, more than 6 months) and during the absence of any pandemic.

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