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Predicting Project Success by Project Manager Competencies and Personality Traits Moderated by Work Experience

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Walden University
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Abstract

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MA, Walden University, 2014

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Industrial/Organizational Psychology

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Abstract

Project manager competencies and personality traits can make the difference between project success or failure. However, it remains unclear which is the strongest predictor of project success when moderated by work experience. The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits was the strongest predictor of project success among project managers at different work experience levels. Data were collected from 272 project managers. Instruments to collect the data were El-Sabaa's adapted version of Katz's three skills of effective administrator measure, the Big Five Personality Trait Short Questionnaire, tenure measured by years of work experience, and the Project Implementation Profile measure. A hierarchical regression analysis was used to assess how project manager competencies and personality contributed uniquely to predicting project success when moderated by work experience. The results indicated that work experience did not improve predicting project success beyond project manager competencies and personality traits. The analysis revealed that project manager competency was a stronger predictor of project success than personality. The study contributes to the literature by informing talent acquisition practices, project management certification requirements. The findings of this study have potential implications for positive social change by contributing to nonprofit project success, which could play a significant role in vulnerable communities and developing countries.

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Dedication

I dedicate this work to my parents, Teacher Sayde and CMSGT Johnny Hudson. Although you are both gone, watching your master's journeys instilled the dedication and sacrifice I needed for mine. This dedication goes to my grandmother, Willie Mae Hudson, who possessed a third-grade education yet was the wisest when she encouraged me to be everything I could be. I also dedicate this work to my siblings Andre and Jandy Hudson for their support and grounding throughout my life. I would be remiss if I did not also dedicate this dissertation to my manager, Monique Anderson, who provided time and resources. Most of all, I dedicate this work to my husband, Flip Kirby, as my biggest supporter and sanity checker along this journey. Thank you all!

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I thank God for reminding me that all things are possible.

I extend my gratitude to my committee chair, Dr. Derek Rohde. You always had an idea or a nudge to help move me forward. Your insight has been instrumental in my getting here. From agreeing to work with me to being there whenever I have called, I am grateful. It is fair to say, “We did it!”

Thank you, Dr. Jason Etchegaray. I have been fortunate to benefit from your expertise and time. I have not forgotten how you graciously agreed to join my committee “in the middle of the movie.” It has been a great comfort to have a methodologist I could trust when I was not sure I trusted myself.

It is an absolute honor to say thank you to such a fantastic dissertation committee.

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Chapter 1: Introduction to the Study

Introduction

Project failures continue to occur at an alarming rate. Globally, there are still more project failures than successes (Gupta et al., 2019). Failed projects can lead to cost overruns, loss of market share, and unmet stakeholder expectations and can impede strategic opportunities (Ahmed & Anantatmula, 2017; Burrell, 2018; Hassan et al., 2017). In addition to the organizational impacts, project failure can deny society products, services, and programs that could improve quality of life (Holcomb et al., 2021). Therefore, researchers have continued to study factors that influence project success, including project approach, project type, stakeholder perceptions, and project manager characteristics (Maqbool et al., 2017).

Many global profit and nonprofit organizations have adopted talent management strategies to hire competent project managers (He et al., 2018). For example, Millhollan and Kaarts-Brown (2016) argued that job announcements seek project managers who possess the Project Management Institute (PMI) certification. Chen et al. (2019) reported an increase in professional development among project managers. Other evidence corroborates the idea that competent project managers can influence project success (Maqbool et al., 2017). Therefore, for-profit and nonprofit organizations must attract and retain the most competent project managers to achieve project success (Alvarenga et al., 2018; Hassan et al., 2017).

Personality traits are also an important factor in achieving successful project outcomes (de Moura et al., 2017). For instance, careers in project management are best

suited for those who can handle ambiguity, volumes of disparate information, criticism, diverse groups, and a high degree of stress (Noor et al., 2020). Therefore, project manager personality traits are considered when staffing project managers at different work experience levels (Chen et al., 2019; Henkle et al., 2019).

Although for-profit and nonprofit organizations consider project manager competence and personality traits in personnel decisions, project failure persists (Gupta et al., 2019). Continued project failure can lead to fewer quality and timely goods and services offered by for-profit companies and diminished social good flowing through nonprofit organizations (Hassan et al., 2017). Therefore, it is important to better understand how project manager competencies and personality traits can influence project success among project managers at different work experience levels.

This study contributes to the project management literature by identifying that project manager competency is a stronger predictor of project success than personality traits among project managers at different work experience levels (Chen et al., 2019). This study provides information to help improve learning and develop interventions for for-profit and nonprofit project managers at different work experience levels (Chen et al., 2019; Hassan et al., 2017). Also, the study supplies knowledge to help improve project management outcomes that benefit vulnerable communities.

This chapter begins with a description of project success, project manager competencies, personality traits, and work experience. In the chapter, I discuss the study's problem, purpose, research questions, theoretical framework, nature, and definitions. The remainder of the chapter provides assumptions, delimitations,

limitations, and significance. The chapter concludes with a summary, the importance of the study to the literature, and a transition to Chapter 2.

Background

Growing research on project success has revealed unclear results (Ika, 2009). There remains no universal definition of project success, complicating measurement (De Wit, 1988). However, studies have revealed that assigned project managers influence project success or failure (Alvarenga et al., 2019). Unsuccessful projects are costing profit and nonprofit organizations $50 billion to $150 billion in losses annually (Gruden & Stare, 2018). Although other factors can influence project success, employing project managers with the right skills and personality is vital to an organization's financial performance, mission, and competitive advantage (Ijaola et al., 2020).

Project success is higher among project managers who possess specific skills and abilities (Luţaş et al., 2020). Millhollan and Kaarts-Brown (2016) argued that technical skills are the minimum requirements for project managers to plan and manage projects of different complexity and context. For example, project managers must be able to communicate effectively with a variety of internal stakeholders, including project sponsors, team members, functional managers, and the public (Gunter, 2020). El-Sabaa (2001) found and grouped 18 essential project manager skills into three categories: human skills, conceptual and organizational skills, and technical skills, with human skills being the most important. However, when project managers lack critical skills, including effective communication, leading others, and planning, then project success is less likely

(Chen et al., 2019). Researchers tend to agree that project manager competency is one of the most predictive factors of project success (Hassan et al., 2017).

Project managers' personal traits are also a critical factor in project success (de Moura et al., 2017). In addition to technical project management techniques, project managers must possess interpersonal skills such as decision making to know how and when to apply their technique to see the most significant project results (Alvarenga et al., 2020). Personality traits such as curiosity, reliability, and collaboration tend to help project managers experience more success than those who do not demonstrate these traits (Henkel et al., 2019). Additionally, project managers who effectively manage their emotions are also associated with consistent project success (Podgórska & Pichlak, 2019). Other studies show that project managers who are enthusiastic, organized, imaginative, and cooperative tend to be the most successful (Masood et al., 2018). Conversely, project managers who are perceived as unconcerned, haphazard, and disagreeable are associated with project failure (Mansour et al., 2021). Many scholars now consider personality a satisfactory predictor of project success (Noor et al., 2020; Thal & Bedingfield, 2010).

The relationship between work experience and project success findings have been mixed. Hoxha and McMahan reported that work experience does not predict project success (2018). However, other scholars have identified a significant relationship between work experience and project success (Noor et al., 2020). Still other researchers have found that work experience influences knowledge, training, performance, and project success (Luţaş et al., 2020). Work experience has been operationalized as the

number of years a project manager has spent planning, leading, guiding, and supervising projects (Podgórska & Pichlak, 2019). The present study is needed because to add clarity to how work experience moderates the relationship between project manager competencies, personality traits, and project success among project managers at different work experience levels. This study was conducted to address this research gap.

Problem Statement

Project success is vital to an organization, especially to achieving and maintaining competitive advantage (Henkel et al., 2019). Project success has been characterized as a project that satisfies the specified purpose and achieves a high level of stakeholder and project team member satisfaction (Moradi et al., 2020). Despite substantial research related to the antecedents, templates, and consequences of project success, 55% of projects are considered a failure or unsuccessful (Burrell, 2018; Gruden & Stare, 2018). Scholars have argued that an assigned project manager is the main driving force behind a project (Alvarenga et al., 2019; Araújo & Pedron, 2016; Shet et al., 2019). Other studies have shown that project managers' competence coupled with personality traits can make a difference in whether a project succeeds or fails (Burrell, 2018; Ijaola et al., 2020).

A general problem among for-profit and nonprofit organizations is continued project failures characterized by missed requirements, cost overruns, and poor stakeholder acceptance. For example, Gruden et al. (2018) reported that projects continue to fail 50%–70% of the time. Two reasons for project failure include lacking or ineffective project manager competencies and negative personality traits (Araújo & Pedron, 2016; Millhollan & Kaarts-Brown, 2016). With project management being used

to achieve strategic goals, organizations must find ways to get the most out of their projects (Ahmed & Anantatmula, 2017). The answer lies in hiring and assigning project managers with the knowledge, skills, abilities, and other traits most associated with project success (Alvarenga et al., 2019). However, securing the most effective project manager qualities remains a challenge given the enduring high project failure rate (Gupta et al., 2019). The specific problem in this study is the lack of information about the relationship between project manager competencies, personality traits, and project success among project managers at different work experience levels. This study also addresses a lack of information about how project manager competencies and personality traits uniquely predict project success when moderated by work experience. Understanding how project manager competencies and personality traits are related to project success may contribute to project manager recruitment and selection decision, professional development, and certification.

Purpose of the Study

The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. The predictor variables were project manager competencies and personality traits. The criterion variable was project success. The moderating variable was work experience. Researchers have suggested additional

investigation into the role work experience plays in the relationship between project manager competencies, personality traits, and project success.

Research Questions and Hypotheses

The following research questions and hypotheses guided this quantitative study:

RQ1: Do project manager competencies as assessed by the three skills of effective administrators measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$1: Project manager competencies do not predict project success.

H_a1: Project manager competencies do predict project success.

RQ2: Do personality traits as assessed by the Big Five personality measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$2: Personality traits do not predict project success.

H_a2: Personality traits do predict project success.

RQ3: Does work experience as assessed by a project manager's years of experience predict project success as assessed by the Project Implementation Profile measure?

$H_0$3: Work experience does not predict project success.

H_a3: Work experience does predict project success.

RQ4: To what extent do project manager competencies as assessed by the three skills of effective administrators measure and personality traits as assessed by the Big Five personality measure contribute uniquely to predicting project success as assessed by the Project Implementation Profile measure?

$H_0$4: Project manager competencies and personality traits do not contribute uniquely to predicting project success.

H_a4: Project manager competencies and personality traits do contribute uniquely to predicting project success.

RQ5: Does work experience as measured by a project manager's years of experience moderate the relationship between project manager competencies as assessed by the three skills of effective administrators measure and project success as assessed by the Project Implementation Profile measure?

$H_0$5: Work experience does not moderate the relationship between project manager competencies and project success.

H_a5: Work experience does moderate the relationship between project manager competencies and project success, such that the relationship between project manager competencies and project success will be more strongly positive at greater project manager years of experience than at lower project manager years of experience.

RQ6: Does work experience as measured by a project manager's years of experience moderate the relationship between personality traits as assessed by the Big Five personality measure and project success as measured by the Project Implementation Profile measure?

$H_0$6: Work experience does not moderate the relationship between personality traits and project success.

H_a6: Work experience does moderate the relationship between personality traits and project success, such that the relationship between personality traits and project success will be more strongly positive at greater project manager years of experience than at lower project manager years of experience.

Theoretical Framework for the Study

Project Management Competency

There is no agreement on a universal theory of project management (Niknazar & Bourgault, 2017). Therefore, I based this study on El-Sabaa's (2001) findings that 18 essential project manager competencies can be grouped into three categories: (a) human skills, (b) conceptual and organizational skills, and (c) technical skill. El-Sabaa grounded the 18 essential competencies in Katz's (2009) three skills of effective administrators. Project management competency is the proven ability to conduct activities exceptionally within a project's complex atmosphere, leading to anticipated results. El-Sabaa's 18 essential project management competencies match other project management competency findings (Ahmed & Anantatmula, 2017; Alvarenga et al., 2019).

Big Five Personality Traits

Personality has been described as a preset system of settings distinctive for every individual (Kraczla, 2017). The Big Five personality traits framework, originally defined by Costa and McCrae (1985) as a five-factor personality assessment, was used for this study. The Big Five personality traits framework is a well-established conceptualization and measurement of five broad dimensions of personality that provides sufficient assurance and strength in personality analyses (de Moura et al., 2019). The Big Five

personality traits framework was used because project manager personality has been a strong predictor of project success.

Work Experience

Tesluk and Jacobs's (1998) theory of work experience has been characterized as the attainment of job-related knowledge, skills, and abilities acquired over time. Work experience considers the length of time working on a task, a job, or within an organization. In addition to length of time, work experience considers the number of times a duty or an assignment has been performed. Key knowledge, skills, and abilities gained from work experience include taking on new assignments, implementing changes, and overcoming job demands from difficulties. Tesluk and Jacobs also argued that the length of time in a job would increase opportunities for a variety of projects that could challenge and stimulate growth and development. The theory of work experience framework was used because project manager work experience has been positively linked to project success.

Project Success

Pinto and Slevin's (1987) framework of project success is generally regarded as one of the leading ways of understanding how to identify and measure project success (Orouji, 2016; Pinto & Prescott, 1988; Pinto & Slevin, 1988). The key components of Pinto and Slevin's theory are (a) clear goals, (b) project manager competence, (c) top management support, (d) team member competence, (e) sufficient resources, (f) adequate communication, (g) control mechanisms, (h) feedback capabilities, and (i) client responsiveness. The framework provided the foundation for developing a behavioral

instrument to assess project status. Pinto and Slevin's theory of project success has been used extensively in project management education and fieldwork (Pinto & Prescott, 1988). This framework provided a set of project success factors to use in this study when exploring project manager competencies and personality which have been found to influence project success.

Much research has been done to investigate the influence of project manager competencies and personality traits on project success. However, what is not known is which is the better predictor of project success. In this study, I aimed to address this gap by exploring the relationship between project manager competencies, personality traits, and project success to determine whether project manager competencies or personality trait was the better predictor of project success.

Nature of the Study

The nature of this study was quantitative and nonexperimental. Quantitative research is consistent with comparing the variation in ratings of project manager competencies and personality traits among project managers at different position levels, which was the focus of this doctoral study (Frankfort-Nachmias et al., 2015). In this cross-sectional study, I used a questionnaire to collect ratings of project manager competencies and personality traits from professional project managers with varying degrees of work experience. Primary data were used to test the hypotheses. The predictor variables were project manager competencies and personality traits, the criterion variable was project success, and the moderating variable was work experience. There were no

exclusions based on industry. However, I focused on project managers with at least 2 years of professional experience in the field of project management.

This study was conducted using quantitative survey research to investigate the relationship between project manager competencies, personality traits, and project success among project managers at different work experience levels. The survey design was cross-sectional with the data collected electronically at one point in time. Survey research is a recommended method to investigate and identify the variables most likely to predict project success among project managers at different stages of their careers. Project manager competencies were defined as the knowledge, skills, and abilities that contribute to project success and was measured using the three skills of effective administrators measure (El-Sabaa, 2001; Katz, 1991). Personality traits were defined as are individual differences in patterns of thinking, feeling, and behaving and was measured using the Big Five personality measure (Cattell, 1943; Costa & McCrae, 1985). Work experience was defined as the number of years in a project manager position and was measured using five classifications on a demographic questionnaire (Denton & Kleiman, 2001). Project success was defined as the state when a project's technical performance conditions and mission are met and stakeholder satisfaction is high and was measured by the Project Implementation Profile measure (Pinto & Slevin, 1987).

Simple linear regression was performed to analyze project manager competencies, personality, and work experience as predictors of project success. Using the Statistical Package for Social Sciences Version 28 (SPSS 28), I analyzed the relationship between the predictor variables project manager competencies and personality traits, the criterion

variable project success, and the moderating variable work experience. Moderation analysis was used to assess the moderating effect work experience had on the strength of the relationship between the predictor variables and the criterion variable (Hayes, 2017).

Definitions

In the following section, I provide definitions of variables in this study.

Personality traits: Individual differences in patterns of thinking, feeling, and behaving (Cattell, 1943).

Project manager competencies: Knowledge, skills, and abilities that contribute to project success (El-Sabaa, 2001).

Project success: The state when a project's technical performance conditions and mission are met and stakeholder satisfaction is high (De Wit, 1988; Kloppenborg & Opfer, 2002; Pinto & Prescott, 1988)

Work experience: The number of years in a project manager position (Quińones et al., 1995; Tesluk & Jacobs, 1998).

Assumptions

There were several assumptions related to this study. One assumption was that all participants would provide an honest assessment of their work experience. Another assumption was that I would recognize the names of any project managers I know to remove those individuals from the participant pool. A third assumption was that participants would be familiar with the Project Management Institute project management framework and terms in the survey.

Scope and Delimitations

The scope of this study included understanding how the relationship between project competencies, personality traits, and project success is moderated by work experience among project managers at different work experience levels. There were no exclusions by industry. However, the scope of the study was limited to project managers at different work experience levels who possess at least 2 years of work experience, which would likely be required to respond to the measurement instruments. Although studies have been conducted to assess the influence of project competencies and personality traits on project success, there have been few studies conducted to investigate the relationship between project manager competencies, personality traits, and project success when moderated by work experience. Data were obtained from a quantitative survey that resulted in scores for project manager competencies, personality traits, work experience, and project success. The measurements were the three skills of effective administrators to measure project managers competencies, the Big Five Personality Trait Short Questionnaire to measure personality traits, a demographic scale to measure work experience or project manager years of experience, and the Project Implementation Profile to measure project success.

Limitations

In this study, I used a convenience sample of project managers solicited through social media platforms and the Amazon Mechanical Turk website. The lack of a random sample weakened the generalizability of the findings.

Significance

As business activities grow more multifaceted and dynamic, project managers at all levels are held accountable for growing technical and interpersonal skills to lead projects in complex environments (de Moura et al., 2019; Gruden & Stare, 2018). The results of this study provide information to help human resources professionals and certification organizations create training to prepare project managers for success at each career stage. Also, this study adds to the literature by joining the conversation about reevaluating current project management certification programs to strengthen the alignment with certain competencies and personality traits needed at specific career stages.

The study could yield positive social change results in the nonprofit sector, where these organizations play a significant role in developing countries (Hassan et al., 2017). Nonprofit organizations are not always able to invest in the training and development of their project management staff. This study might provide practitioners and educators with role-specific training and development needs, improving project managers' social change project management within vulnerable communities.

With the findings of this study, I aimed to address a gap in the literature by using a single study to investigate the influence of project manager competencies and personality traits on project success among project managers at specific work experience levels (Chen et al., 2019). This study explains whether project manager competencies or personality traits are the most significant predictor of project success. In addition, this

study provides insight into the most critical project manager competencies and personality required at different work experience levels (Chen et al., 2019).

Summary

Chapter 1 introduced several impacts of project failure. The chapter provided definitions of and background about project manager competencies, personality traits, work experience, and project success. Project manager competencies and personality traits are two of the most critical factors that impact project success (Millhollan & Kaarts-Brown, 2016). The background information about project manager competencies, personality traits, and work experience helps with understanding how project manager competencies and personality traits can influence project success. This chapter also included a problem statement, a purpose of the study, and the aligning research questions and hypotheses. Chapter 1 also highlighted the potential applications of the study, including informing human resources professionals and certification organizations about possible project management training for different work experience levels.

Chapter 2 includes the relevant literature related to project success. The chapter consists of the foundation of project success and the influence of project manager competencies, personality traits, and work experience. In Chapter 3, I explain the purpose of the study, the research design and methods, and the data analysis procedures. In Chapter 4, I describe the results, data collection, statistical tests, data analysis, and minor changes to the research proposal. Lastly, Chapter 5 concludes the study by interpreting the findings and providing recommendations, limitations, and a final summary.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. Organizations depend on project management to achieve initiatives and maintain competitive advantage (Alvarenga et al., 2019; Henkel et al., 2019). Unsuccessful projects result in billion-dollar losses annually (Hughes et al., 2020).

There has been extensive study on project success and factors influencing project outcomes, including project manager competencies and personality traits (Baccarini, 1999; De Wit, 1988; Maqbool et al., 2017). For example, Davis (2014) argued that numerous factors can influence project success including project manager competencies. In another study, Hassan et al. (2017) found that project success was positively related to personality traits including extraversion, agreeableness, conscientiousness, and openness to experience. Although work experience was not a strong predictor of project success, some research has revealed that project managers' work experience is significantly linked with personality, which could moderate the relationship between project managers' personality traits and project success (Hoxha & McMahan, 2018; Noor et al., 2020). However, little research has been conducted to investigate if project managers'

competencies or personality traits are the most significant predictor of project success among project managers at different work experience levels (Chen et al., 2019). This literature review provides insight into the relationship between project manager competencies, personality, and project success.

In this chapter, I review relevant literature on project manager competencies, personality, and project success. I include the literature search parameters used for this literature review. Finally, a comprehensive literature review of project manager competencies, the five-factor personality model, and project success follows, and I close with a summary and conclusion.

Literature Search Strategy

I searched for relevant peer-reviewed scholarly literature from PsycINFO, Business Source Complete, Emerald Insight, Sage Premier, ProQuest Central, and Science Direct databases. I searched Google Scholar in addition to these databases. The keywords and phrases used included *project managers, project manager competencies, project success, skills, information technology project managers, personality traits, work experience, career path, development path*, and *project manager and personality traits and project success*. I primarily examined literature published from 2017 to 2020. I selected articles from the following categories: project manager competency articles, personality trait-related articles, project success-related articles, and work experience. Some selected articles included seminal works and articles from 1985, where there is little information about the relationship between project managers, personality traits, and project success.

Theoretical Foundation

Project Management Competency

Project success is influenced by several factors: project manager skills, project management approach, project team, project size, senior leadership support, organizational hierarchy, external factors, and environmental factors (Hassan et al., 2017; Wu et al., 2017). Project manager technical and interpersonal skills have received substantial attention in the literature (Burrell, 2018; Omar & Fayek, 2016). One standard definition of competency is the combination of knowledge, skills, and attitude (Chen et al., 2019; He et al., 2019; Moradi et al., 2020). Researchers generally agree that project manager technical skills, such as planning and control, are necessary but insufficient for project success without the use of interpersonal skills, including leadership and communication (Gruden & Stare, 2018; Maqbool et al., 2017; Millhollan & Kaarst-Brown, 2016).

Project management competency is the proven ability to carry out activities within a project's complex atmosphere, leading to anticipated results. There is no agreement on a universal theory of project management (Niknazar & Bourgault, 2017). Therefore, this study was based on El-Sabaa's (2001) project manager competencies categories: human skills, conceptual and organizational skills, and technical skills. El-Sabaa grounded the three project manager competencies in Katz's (1991) three skills of effective administrators. El-Sabaa's project manager competencies matched other project management competency findings (Ahmed & Anantatmula, 2017; Alvarenga et al., 2019). Therefore, the three El-Sabaa project manager competencies provided a

foundation for evaluating project managers' human, conceptual and organizational, and technical skills in this study.

The Big Five Personality Traits

Personality, another literature focus, has been linked to project success (Aretoulis et al., 2017; de Moura et al., 2019; Henkel et al., 2019). Some researchers describe personality as a preset system of thought, emotions, motivation, and behavior for every individual (Kraczla, 2017; Thielmann et al., 2020). In this study, I used Costa and McCrae's (1985) Big Five personality traits framework. The Big Five personality traits framework is a well-established conceptualization and measurement of five broad personality dimensions that provide sufficient assurance and strength in personality analyses (de Moura et al., 2019). The Big Five personality traits approach assumes that the five personality dimensions cover and incorporate the most known personality traits and are expected to describe the basic structure behind all personality traits across a given culture (Barańczuk, 2019; Do & Minbashian, 2020; Pletzer et al., 2019).

The Costa and McCrae (1985) Big Five personality traits model incorporates a myriad of traits into the following five predictor dimensions:

- Extraversion: Individuals with extraverted personalities tend to exhibit warmth, assertiveness, sociability, and energy. The extraversion trait is related to dominance with a team and the propensity for creative performance, which can be beneficial in modern project management settings (Ling et al., 2020; Masood et al., 2018). Project managers with higher extraversion scores tend to experience greater project success (Henkel et al., 2019; Thal & Bedingfield, 2010).

- Agreeableness: Individuals with agreeable personalities tend to be cooperative, honest, compliant, sympathetic, and trustworthy. Agreeable project managers are known for getting along well with others (Ersoy-Kart et al., 2018; Ling et al., 2020). In a project setting, a project manager's agreeableness personality trait can foster collaborative team and psychologically safe environments (de Moura et al., 2019).
- Openness to Experience: Individuals with open personalities tend to demonstrate creativity, intellectual curiosity, sensitivity to beauty, and openness to emotion. The openness to experience trait has been linked to leader performance and overall project success (Bell, 2007). Project managers who score higher on the openness to experience trait tend to be willing to consider innovative problem solving and novel ideas, which can be useful in project management situations (Aretoulis et al., 2017).
- Conscientiousness: Individuals with conscientious personalities tend to be self-disciplined, responsible, orderly, dutiful, and dependable (Goldberg, 1993; Novo et al., 2017). Conscientiousness traits such as accountability are essential for project success (Mac Donald et al., 2020). Conscientious project managers demonstrate more control over their resources and environments, which tends to lead to effective project team outcomes (Hassan et al., 2017).
- Neuroticism: The neuroticism personality trait is characterized by negative emotions, insecurity, and anxiousness (de Moura et al., 2019). Project managers who score higher on neuroticism struggle to maintain emotional stability during

times of uncertainty (McCrae & John, 1992). Project managers who are given to neuroticism tend to score lower on leader performance and team performance (Deinert et al., 2015).

Individual behavior and emotional differences have been correlated with project success (Modranský et al., 2020; Ram & Ronggui, 2018; Vo et al., 2019). For example, research has shown that project deliveries are more successful when project managers' personalities are a strong match with project success factors, including the project team, project size, and project type (Ahmed & Anantatmula, 2017; Jabar et al., 2018; Rogo et al., 2020). In this study, I used the Big Five personality traits framework because project manager personality has been a strong predictor of project success (Mount & Barrick, 1998; Henkel et al., 2019; Masood et al., 2018).

Work Experience

Work experience is critical for project manager performance and success (Luţaş et al., 2020; Noor et al., 2020). Several personnel processes involve work experience, including selection, compensation, promotion, training, performance management, and career development (Ash & Levine, 1985; Van Iddekinge et al., 2019). Early conceptualization of work experience began without a guiding theoretical framework (Tesluk & Jacobs, 1998). Several researchers primarily conceptualized work experience by using tenure or years in a job or organization (Borman et al., 1993; McDaniel et al., 1988; McEnrue, 1988; Waldman & Avolio, 1993).

Tesluk and Jacobs (1998) developed an integrated work experience model of three quantitative and qualitative components that exist at different levels of specificity,

which accrue and interact over time and influence job performance. The core components of the Tesluk and Jacobs work experience model are: (a) the traditional time-based measures of work experience that capture the length of time on a task, in a job, or with an organization (McDaniel et al., 1988); (b) the number of times a task or duty has been performed (Ford et al., 1992); and (c) the type of work challenges and interactions that accrue over time (DuBois & McKee, 1994; McCauley et al., 1994).

Tesluk and Jacobs argued that a work experience model would involve interactions between tenure, amount, and density of work components. The Tesluk and Jacobs work experience framework assumes that tenure repeatedly exposes an individual to several challenging situations, which can create richer work experiences leading to the development of knowledge, skill, and job performance (Chen et al., 2019; El-Sabaa, 2001; Hoxha & McMahan, 2018; Noor et al., 2020). In this study, I used the Tesluk and Jacobs work experience framework because project manager work experience has been associated with project success (Luţaş et al., 2020; Noor et al., 2020).

Project Success

Project success theory is the basis for this research. Project success has been developed into a notable research subject within project management literature (Hassan et al., 2017; Müller & Jugdev, 2012; Pinto & Slevin, 1987). Despite the growing body of knowledge, the project management literature offers no consistent definition of the project success construct (Radujković & Sjekavica, 2017; Wu et al., 2017). Early definitions of project success focused on meeting the technical aspects of a project and accomplishing the project management approach (Baccarini, 1999; Shenhar et al., 2001;

Turner et al., 1999). Today, a project is considered successful when the technical performance conditions and mission are met and if stakeholder satisfaction is high (De Wit, 1988; Kloppenborg & Opfer, 2002; Pinto & Prescott, 1988). Researchers have continued to provide clear definitions of project success (Jugdev & Müller, 2005; Müller & Turner, 2007). Other scholars have conducted studies to identify the factors and criteria for project success for various projects and specific types of projects (Cooke-Davies, 2002; Martin et al., 2018; Shahnazari et al., 2013).

The Pinto and Slevin (1987) framework of project success is considered one of the top ways to identify and measure project success (Orouji, 2016; Pinto & Prescott, 1988; Pinto & Slevin, 1988). Pinto and Slevin's theory's key components are clear goals, project manager competence, top management support, team member competence, sufficient resources, adequate communication, control mechanisms, feedback capabilities, and client responsiveness. The framework provides the foundation for developing a behavioral instrument to assess project status. Pinto and Slevin's project success theory has been used extensively in project management education and fieldwork (Pinto & Prescott, 1988). This framework provided a set of project success factors for this study exploring project manager competencies and personality, both of which influence project success.

Researchers have investigated the influence of project manager competencies and personality traits on project success. However, the literature is unclear on which is the better predictor of project success. In this study, I aimed to address this gap by exploring the relationship between project manager competencies, personality traits, and project

success to determine whether project manager competencies or personality traits would better predict project success.

Literature Review

Project Manager Competencies

The concept of competency has been applied within organizations for decades (Adero & Odiyo, 2020; Chow et al., 2017; Koeppen et al., 2008). Competency frameworks became the solution to replace traditional job descriptions (Sanchez & Levine, 2009). Hartig et al. (2008) described competencies as complex ability constructs closely related to real-life performance. Specifically, project managers need diverse competencies to meet stakeholder expectations, lead project teams, and interact with others at different levels within an organization (do Vale et al., 2018; Novo et al., 2017). The list of project manager competencies has grown over time (Belassi & Tukel, 1996; Chua et al., 1999; Jugdev & Müller, 2005). One adverse impact of the growing list of competencies is the unrealistic expectation that project managers acquire and maintain essential competencies (Alvarenga et al., 2019). Loufrani-Fedida and Missonier (2015) argued that the expanding list of competencies requires project managers to be wizards. As a result, studies have been conducted to narrow down the essential competencies associated with project manager performance (Ahsan et al., 2013; de Araújo & Pedron, 2015; Pinto et al., 2017).

Scholars tend to agree that project manager performance is central to project success (Ahmed & Anantatmula, 2017; Maqbool et al., 2017). However, project manager success assessment is often comingled and confounded by the project management

approach (De Wit, 1988; Ika, 2009). Although project manager competence and project management approach have been linked to project success, they measure different factors. Baker et al. (1988) found that project inputs, processes, and outputs positively influenced project success. In another study, researchers discovered that project managers' knowledge, skills, and abilities increased the likelihood of successful projects (Freeman & Beale, 1992; Pinto & Slevin, 1987). Researchers have reported that a project management approach is essential to project success but insufficient to achieve overall project success (Bauer et al., 2014; Gale & Brown, 2003; Sopa et al., 2020;). Recent studies have shown that project managers' characteristics and behaviors significantly impact project success more than the project management approach (Wu et al., 2017; Yang et al., 2021). For example, Pinto and Slevin (1988) argued that project manager selection would differentiate project success or failure. The literature is clear that project manager competence is one of the reasons for successful or unsuccessful projects (Ahmed & Philbin, 2020; Wen & Qiang, 2019).

Effective project managers have been studied extensively (Crosby, 2012; Zavadskas et al., 2008). Millhollan and Kaarst-Brown (2016) argued that project managers are unique from other managers because they hold specialized project management training and general business management skills. Gray and Ulbrich (2017) found that competent project managers possess a diverse skill set that contributes directly to project success. Millhollan and Kaarst-Brown (2016) advanced the project management literature by developing a list of seven project manager hard skills and soft skills that consider stakeholder influence, including the following: (a) project

management skills, (b) business management skills, (c) knowledge of project techniques and disciplines, (d) interpersonal skills, (e) managing the project sponsor, (f) situational awareness, and (g) integration management. Other studies have revealed that soft skills enhance the ability to use hard skills in various situations (Araújo & Pedron, 2016; Ballesteros-Sánchez et al., 2017; Hutagalung et al., 2020; Rao, 2018). To better understand what constitutes a good project manager, Fisher (2011) developed and triangulated an extensive list of the most critical soft skills, including (a) managing emotions, (b) building trust, (c) communication, (d) motivating others, (e) influencing others, (f) cultural awareness, (g) leading, and (h) team building. Despite an increased study on soft skills, there is no universal set of project manager soft skills, possibly because of the unique projects and fluid situations in which their soft skills are used (Cohen et al., 2013).

Although a standard list of soft skills has not been identified, Alvarenga et al. (2019) surveyed 257 project managers. They found communication ranked as the highest of all, which aligns with other studies that have reported that effective communication can motivate teams, reduce confusion, increase clarity, enhance team performance, and foster project success. Alvarenga et al. also discovered that commitment ranked the second highest and technical or hard skills ranked third among the most crucial project manager competencies.

Scholars have also explored the most important project manager competencies in different industries (Al-Ghareeb & Al-Wotayan, 2021; Correa et al., 2018; Sang et al., 2018). Hassan et al. (2017) found that effective project managers possess project

management expertise, business management knowledge, technical abilities, and interpersonal skills in the information technology field. Alvarenga et al. (2019) found that the most vital construction project manager competencies are communication, leadership, and conflict management skills. Despite the industry, the project managers who combined interpersonal and technical project management skills experienced the most project success, which is consistent with other studies (Podgórska & Pichlak, 2019; Sopa et al., 2020; Zuo et al., 2018).

In addition to technical and interpersonal skills, personality plays a role in project manager performance (Bedingfield & Thal, 2008; Denney et al., 2020; Thal & Bedingfield, 2010). Cohen et al. (2013) found that project managers tend to have unique traits when contrasted with the rest of the population, such as handling high amounts of ambiguity. Scholars have found that project managers scored higher on intuitive and thinking traits than others in the population (Leybourne & Sadler-Smith, 2006; Ling et al., 2020). These findings align with other studies that suggest that project managers often rely on their intuition in uncertain situations (Cohen et al., 2013).

The literature is clear that effective project managers require interpersonal skills, project management skills, and business acumen (Cheng et al., 2005; Gillard, 2009; Jewell et al., 2020). Project managers must possess flexibility throughout the project life cycle and be responsive to stakeholders (Matturro et al., 2019). However, there is no guarantee of project success without a competent project manager who knows what knowledge and interpersonal skills to use to promote overall project success (do Vale et al., 2018; Jena & Satpathy, 2017; Sanchez & Terlizzi, 2017). Alvarenga et al. (2019)

argued that a competent project manager would know when to use leadership skills, communication, problem-solving rather than financial acumen, scheduling, and quality management. Later literature highlights the positive outcomes when project managers combine proven project management techniques with superior interpersonal skills (Henkel et al., 2019; Jones et al., 2018; Putra et al., 2020).

Katz Three Skills of Effective Administrators Model of Leadership

Katz (1991), one of the forerunning researchers of managerial skills, proposed that effective administrators possess three developable skills that focus on what ideal leaders do rather than on what leaders are. The Katz model of leadership assumes that developing the core three administrator traits would preclude the need for identifying specific traits. The three skills of effective administrators approach applies those who (a) direct the activities of others and (b) assume the responsibility for achieving certain objectives through those efforts (Floris et al., 2020; Katz, 1991). Katz (1991) described the human skill as working effectively as a group member and building cooperation within their teams. Katz characterized conceptual skill as the capability to envision the enterprise as a whole including recognizing the dependencies between various parts of the enterprise. Katz defined technical skill as specialized knowledge, analytical capability, and tools and technique proficiency within that discipline. The Katz's leadership model has been adapted by other scholars to develop conceptual models including El-Sabaa's (2001) project manager competencies model used in this study.

El-Sabaa Model of Project Manager Skills

El-Sabaa (2001) developed a conceptual framework based on Katz's (1991) three skills of effective administrators model of leadership. El-Sabaa clustered 18 project manager characteristics into the following three main categories: human skill, conceptual and organizational skill, and technical skill. Each of the skill categories represent the best-in-class personal traits, characteristics, and competencies of the project managers.

Project Manager Human Skill

El-Sabaa described project manager human skills as the ability for a project manager to lead, work collaboratively with others, and participate in groups. El-Sabaa also identified that project managers with proficient human skills would be sufficiently sensitive to the needs and motivations of sponsors, project team members, and stakeholders. In addition to sensitive to the needs of others, Ahmed and Anantatmula (2017) argued that project managers must develop trust among their project team members and demonstrate trusting behaviors with stakeholders to promote project success. Along with being trustworthy, El-Sabaa argued that project managers with strong human skill must possess the self-awareness to recognize their own point of view and emotions related to human activity. For example, Dulewicz and Higgs (2004) identified three project manager leadership dimensions: emotional, managerial, and intellectual. Of the three project manager dimensions Dulewicz and Higgs found self-awareness was the most related to job performance, which aligns with El-Sabaa and other studies (Gong et al., 2019). Project managers with highly developed human skills tend to possess the self-awareness and self-esteem communicate and influence constructively

across all levels of an organization, leading to greater project success (Gunter, 2020; Katz, 1991).

Silva (2016) described the human skill of leadership as a process of influence. A significant part of project managers' leadership role includes motivating, influencing, and mobilizing team members, stakeholders, and vendors to drive project performance (Karlsen & Berg, 2020; Müller & Turner, 2007; Sankaran et al., 2019). Several studies found that project manager's ability to work with people are the most critical competency for influencing project success (Liu et al., 2019; Maqbool et al., 2017; Raziq et al., 2018). According to El-Sabaa (2001), effective project managers are leaders who can mobilize their subordinates' mental and emotional energy, which is linked to project success. For example, project managers who score high on human skills can build trust fosters a team's willingness to accomplish tasks, which positively influences project performance (Boyatzis et al., 2019; Cleveland & Cleveland, 2020; Rezvani et al., 2018). Some researchers found that leadership competency such as delegating correlated with project success, suggesting that an effective leader may be less likely to be a poor project manager (Dulewicz & Higgs, 2004). Research has shown that relating behaviors are the most critical project manager competency (Nicholas & Steyn, 2008). Turner et al. (1999) identified seven personal leadership characteristics for effective project managers: (a) problem-solving ability, (b) result orientation, (c) energy and initiative, (d) self-confidence, (e) perspective, (f) communication, and (g) negotiation skills. Other studies have been done to understand the effect of project managers' human skills on project

success (Afzal et al., 2018; Ahmed & Anantatmula, 2017; Clarke, 2010; Maqbool et al., 2017; Sergey et al., 2019; Yang et al., 2021).

The literature is clear that a competent project manager must possess adaptable human skills, including managing their emotions in various project situations (Ballesteros-Sánchez et al., 2017; de Rezende & Blackwell, 2019). Researchers discovered that emotional dimensions such as self-awareness and political sensitivity are important to effective project management leadership and project success (Dulewicz & Higgs, 2004). For example, political sensitivity influences decision making, which is a significant part of a project manager's role (Katz, 1991; Khosravi et al., 2020; Livesey, 2017; Zhang et al., 2018). El-Sabaa (2001) found that human skills, including managing emotions ranked as the most important project manager skill among the 126 project managers who were asked to rate the most important skills for the ideal project manager.

Project Manager Conceptual and Organizational Skill

El-Sabaa (2001) described the conceptual and organization skill as a project manger's ability to think of the project as a whole. The conceptual and organization skill includes recognizing how the various components of a project are interdependent and how this interdependence reaches to the community, political, economic, and social domains (Chen et al., 2019; Gray & Ulbrich, 2017). El-Sabaa argued that an effective project manager could visualize the relationship between an individual project and the parent organization. Project managers would use their conceptual and organizational skill to plan and organize the project in a way that benefits the project and the organization (El-Sabaa, 2001; Horváth, 2019). In addition to the planning and organization skill,

project managers with strong conceptual and organizational skill have strong goal orientation and problem orientation, which have been linked to project success (Krchová, 2019; Novo et al., 2017).

Project Manager Technical Skill

El-Sabaa (2001) defined project manager technical skill as the understanding and specialization in approaches, processes, procedures, and tools. According to El-Sabaa, effective project managers should have related experience or knowledge of project management methodology and technology. Studies show such technical skills can be learned in a classroom setting or on the job (Henkel et al., 2019). In another study, Starkweather and Stevenson (2011) argued that project managers with and without project management certification should be able to deliver successful projects. Although project management approaches and related software is insufficient to guarantee project success, successful project managers must possess these technical skills to promote project success (Millhollan & Kaarst-Brown, 2016).

Big Five Personality Traits

The relationship between personality traits and project manager performance has been studied for two decades (Dvir et al., 2006). Turner and Müller (2006) found that project managers matched with suitable projects were more effective than project managers who were mismatched with their work assignments. Sasu (2018) also stressed the importance of aligning project managers' characteristics with specific project features to achieve greater project success. Although there are several personality measures, the Big Five personality traits framework has been used in various studies to evaluate the

relationship between project manager personality and overall project results (de Moura et al., 2019; Gray & Ulbrich, 2017; Hassan et al., 2017).

The five fundamental dimensions of personality are extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism (Kutta et al., 2020; Oshio et al., 2018; Stajkovic et al., 2018). This five-factor model surfaced when two researchers concluded that five factors explained most of human behavior (Goldberg, 1993; Tupes & Christal, 1992). Before the five-factor personality framework was operationalized, Cattell (1943) reduced the number of adjectives, eliminated synonyms, and developed the self-report Sixteen Personality Factor Questionnaire. Although there has been criticism that the Big Five Personality traits framework may omit some personality traits, the framework has been used consistently to measure personality traits among project managers (Digman, 1990; Goldberg, 1993; Mount & Barrick, 1998; Noor et al., 2020).

Elements of the Big Five Personality Traits

Despite a hiatus in the research and questions about its predictive power, the Big Five personality traits framework has been used consistently to assess the personality traits of leaders, including project managers who are a specific type of leader (Do & Minbashian, 2020; Hogan et al., 1994; Pelt et al., 2017). Using different methods, four sets of researchers have identified the same five personality traits with somewhat different names and definitions (Cattell, 1943; Costa & McCrae, 1985; Goldberg, 1993; Tupes & Christal, 1992). The Big Five Personality traits framework has been used to explore the impact of project manager personality on job performance and overall project

success in different settings and across different cultures (Choudhry & Zafar, 2017; Vo et al., 2019; Zheng et al., 2020).

Extraversion. Extraversion is characterized by warmth, sociability, assertiveness, excitement-seeking, and dominance (Aretoulis et al., 2017; Hassan et al., 2017). Extraverted individuals tend to demonstrate dominance and action orientation (Spark & O'Connor, 2020; Tran et al., 2020; Wihler et al., 2017). Those who score high on extraversion appear ambitious and often seek opportunities for visibility (Greif et al., 2019; Saatci & Ovaci, 2020). Compared to more introverted individuals, extraverted people may seem to dominate team settings (Henkel et al., 2019). Aretoulis et al. (2017) found that extraverted project managers can work with teams and motive them to desired performance. These findings align with other studies that report extraverted project managers are associated with team performance and project success (Bradley & Hebert, 1997; Masood et al., 2018; Thal & Bedingfield, 2010; Wang & Li, 2009).

Agreeableness. Agreeableness is characterized by kindness and an optimistic view of human nature, which is important in complex and volatile work environments such as project management offices (Miralam et al., 2020). Agreeable individuals seek social harmony, are sympathetic, engender trust, and are helpful to others (Conard, 2020; Sutin et al., 2020; Tobin & Graziano, 2020). The agreeableness trait has been associated with a preference for cooperation, collaboration, and acceptance of others (Collodi et al., 2020; Khan, 2021; Proto et al., 2019). Conversely, disagreeable individuals may be perceived as skeptical, unfriendly, and generally unconcerned about others (Barlett & Anderson, 2012; Hofmann & Jones, 2005; Joseph & Zhang, 2021). Agreeable project

managers can build trust and establish collaborative work environments, which has been linked to project success (Aronson, 2018; Gunter, 2020; Ling et al., 2020). de Moura et al. (2019) argued that building trust is an essential trait for successful project managers because it is related to superior leadership outcomes. Agreeable project managers tend to be transformational leaderships capable of achieving effective job performance (Ding et al., 2017; Jiang et al., 2017; Shokory & Suradi, 2018). These findings are like those reported by other researchers (Aga et al., 2016; Bond-Barnard et al., 2018; Urton & Murray, 2021).

Openness to Experience. The openness to experience trait is characterized by curiosity, aesthetics, ideas, and imagination (Forthmann et al., 2018; McCrae, 1993; Tan et al., 2019; Zhang et al., 2019). Compared to individuals who score low on openness to experience, these individuals appear to be more aware of their feelings and creative (Furtner et al., 2018; Naz & Khan, 2018). Although some studies did not show openness to experience as a strong predictor of performance, the trait has been linked to leader performance and team outcomes (Bell, 2007; Deinert et al., 2015). Individuals who score higher on openness to experience tend to demonstrate intellectual curiosity, a general art appreciation and are willing to explore novel ideas (Silvia & Christensen, 2020; Sobkow et al., 2018; Xu et al., 2021). Project managers who score high on openness to experience are more innovative leaders who can solve problems leading to project success (Hachana et al., 2018; Martin et al., 2018; Thal & Bedingfield, 2010).

Conscientiousness. Those conscientious are described as dependable, persistent, and self-disciplined (Babcock & Wilson, 2020; Shahzad et al., 2020; Topino et al., 2021).

Individuals who score high on conscientiousness tend to be more goal-oriented and organized than others who score lower on this trait (Kim & Rho, 2017; Mansour et al., 2021; Sarhangpour et al., 2018). Managers high in conscientiousness demonstrate a greater control over their environments and engender the same quality in their teams (Peterson et al., 2003). Aronson et al. (2006) argued that project managers high in conscientiousness would experience greater success, supported by findings that suggest that conscientiousness is the primary predictor of project success (Aretoulis et al., 2017; Masood et al., 2018; Thal & Bedingfield, 2010).

Neuroticism. Neuroticism or emotional instability is the propensity to experience negative emotions such as anger, anxiety, or depression (Ahmad & Khan, 2019; Martin et al., 2000; Zajenkowski & Gignac, 2018). Individuals who score high on neuroticism may demonstrate irritability, recklessness, and impulsiveness (Hassan et al., 2017; Mao et al., 2018; Sindermann et al., 2020). Conversely, those who score low on neuroticism are generally emotionally stable, positive, and self-confident (Hussein, 2017; Ling et al., 2020; Stieger et al., 2020). Leaders who demonstrate the neuroticism trait tend to be vulnerable to organizational stress, overact to situations leading, and create poor performance outcomes (Bertsch et al., 2017; Miralam et al., 2020; Shahzad et al., 2020). Neuroticism is also connected to a cynical view of work, which decreases creativity and hinders leadership ability (Guo et al., 2017; Kolawole et al., 2020; Noor & Esa, 2021). The literature is clear that project managers who score higher on neuroticism can negatively influence leadership outcomes, team performance, and overall project success (Boudreau & Anis, 2020; Kolawole et al., 2020; Sadeh & Dvir, 2019).

Work Experience

Tesluk and Jacobs (1998) argued that work experience should include measures for tenure, amount, and nature of work. Work experience has been defined as the time spent in a specific job or the number of times a certain task has been completed (Quińones et al., 1995). For example, tenure would be the number of years an individual spends in the project manager role and amount is the number of projects worked by an individual (Noor et al., 2020; Tesluk & Jacobs, 1998). The tenure view of work experience assumes that individuals accumulate job-related knowledge, skills, and abilities over time (Quińones et al., 1995; Tesluk & Jacobs, 1998; Van Iddekinge et al., 2019).

Some scholars contend that tenure does not account for the contextual nature of work experience (Srikanth, 2020; Tesluk & Jacobs, 1998). For example, experiential learning theorists argue that individuals learn more from the nature of their work experience rather than tenure and amount of work (Kolb, 2014; McCauley et al., 1994). However, Chen et al. (2019) and El-Sabaa (2001) discussed that project manager competency takes tenure, or time in a project manager specific role. Although tenure does not include the amount or context of work completed, tenure provides sufficient insight into work experience for this study (Dragoni et al., 2011; Ford et al., 1992; Noor et al., 2020; Tesluk & Jacobs, 1998; Van Iddekinge et al., 2019).

Studies have shown that tenure, or time spent in a role can lead to work density (Srikanth, 2020; Tesluk & Jacobs, 1998). Density of work experience has been described as a “developmental punch” derived from various challenges encountered on the job

(Tesluk & Jacobs, 1998). Density of work experience has been characterized as those experiences likely to have a dramatic effect on career trajectories such as learning, motivation, and performance (Tesluk & Jacobs, 1998). Srikanth (2020) defined density of work experience as the product of various roles such as individual contributor, team lead, and manager and the corresponding time spent in those roles across the challenging work activities throughout a person's career.

The density of work experience view of work experience assumes that project managers have sufficient tenure in a project manager role to consistently engage in challenging work, which tends to lead to project success and promotion (Chen et al., 2019; El-Sabaa, 2001; Gewanlal & Bekker, 2015). Research has revealed that density of work experience can have a profound effect on job performance (Kolz et al., 1998; Noor et al., 2020; Srikanth, 2020). For instance, some scholars have argued that most challenging projects should be reserved for the individuals the most likely to use time in role to grow their competencies (Ahmed & Philbin, 2020; Chen et al., 2019; De Pater et al., 2009; Dragoni et al., 2009; Hughes et al., 2020; Wen & Qiang, 2019). In another study, Ramazani and Jergeas (2015) found that diverse project manager work experience gained over time was related to project success. Gewanlal and Bekker (2015) argued that project manager wide-ranging experience qualifications significantly affected project success. In another study, Edum-Fotwe and McCaffer (2000) found that practical and varied project management experience is the most vital requirement for improving project manager performance.

Scholars tend to agree that tenured project managers receive more diverse and challenging experiences resulting in greater competence and work experience than project managers whose lack of tenure affords them fewer opportunities for various challenging work experiences (Ford et al., 1992; Schmidt & Hunter, 2004). Research has shown that more time on the job exposes project managers to greater opportunities for the density of work experience which could lead to greater performance (Noor et al., 2020; Srikanth, 2020). Noor et al. (2020) and Srikanth (2020) found that the quality of work experience can also influence project manager competence and project success. For example, project managers with density of work experience are more likely to achieve project success (Luțaș et al., 2020). Conversely, project managers' work experiences that lack density will not produce the developmental opportunities that lead to the most challenging work assignments (Chen et al., 2019; El-Sabaa, 2001).

In addition to the influence tenure, work experience studies acknowledge that personality, or individual differences may influence work experience outcomes (Barrick & Mount, 1991; Dragoni et al., 2009). Tesluk and Jacobs (1998) stated that individual differences provide insight into work experience. Other researchers have found positive relationships between work experience and individual differences. In one study, Hassan et al. (2017) found that work experience was significantly correlated with personality. Other researchers like Barrick and Mount (1991) argued that being open to new opportunities demonstrates a propensity for learning. Yang (2004) discovered that the Big Five personality trait openness to experience was linked to applying on-the-job lessons learned. Henkel et al. (2019) found that project managers who score higher on openness

to experience and conscientiousness tend to be motivated to take on developmental opportunities that enhance work experience. Uppal et al. (2014) argued that individuals high in openness to experience are more likely to see performance gaps as opportunities to learn and grow rather than failures. Scholars have also found that individual differences in openness to experience, and conscientiousness led to persistence, ambition, hard work, and reliability, linked to job performance over course of a project manager's career (Barrick & Mount, 1991; Noor et al., 2020; Srikanth, 2020). The work experience literature suggests that personality traits such as openness to experience and conscientiousness have contributed to an individuals' participation in developmental activities during their tenure such as problem solving (Barrick & Mount, 1991; Dragoni et al., 2011; Kolz et al., 1998; Kurz & Bartram, 2002; Srikanth, 2020; Tesluk & Jacobs, 1998).

The literature supports the idea that tenure in a project manager can lead to growth opportunities that foster greater performance (Noor et al., 2020). For instance, Gewanlal and Bekker (2015) argued that a project manager would not likely gain valuable work experience without accrued time engaged in challenging work assignments that enhance knowledge, skills, and abilities. Also, the work experience literature suggests a possible relationship between project manager competency, personality, tenure, and project success (Noor et al., 2020).

Some researchers have studied the moderating effect of work experience (Noor et al., 2020). In one study including a moderator, Shi and Chow (2015) revealed that prior work experience moderated the relationship between social commerce trust and

electronic word of mouth intention variables. In another study, researchers found that work experience moderated the relationship between salesperson knowledge and performance (Matsuo & Kusumi, 2002). On the other hand, some researchers have not found significant moderating effects from work experience (Noor et al., 2020). Some researchers argue that individual difference factors account for the difference in job performance rather than work experience (Borman et al., 1993; Tesluk & Jacobs, 1998). Despite some findings, there is sufficient evidence to support using work experience as the moderating variable that could alter the relationship between project manager competencies and personality and project success.

Project Success

Project success has become a widely discussed topic within scholarly and business domains. One reason for the increased focus on project success is its link to organizational productivity, sustainability, and competitive advantage (Pollack et al., 2018). Researchers have examined project success from various angles, including benchmarking successful projects, identifying success measures, and investigating stakeholder management (de Oliveira & Rabechini, 2019; Hughes et al., 2020). Early on, traditional project success measures were based on the iron triangle of scope, cost, and time (Azanha et al., 2017; De Wit, 1988; Ogunlana, 2010;). Baker et al. (1988) argued that meeting schedules, staying within budget, and delivering products are necessary but not enough to guarantee overall project results. Other researchers found that overall project success and project management approach are measured differently, which means

project success and project management approach should be distinguished (De Wit, 1988; Ika, 2009).

The literature is clear that the subject of project success is repeatedly examined, but the evidence is apparent that a comprehensive definition of project success is rarely realized (De Wit, 1988; Pinto & Slevin, 1988). However, scholars concur that such factors can influence project success as project type, project size, project team members, stakeholder expectations, and leadership support (Baccarini, 1999; Dvir et al., 2003; Prabhakar, 2008). For example, researchers have studied project success among construction, engineering, software development, and public and private sector projects (Davis, 2017; Imam & Zaheer, 2021; Kissi et al., 2019; Nanthagopan et al., 2019). He et al. (2019) researched megaprojects and discovered that the factors related to their success are different from regular construction projects. The diverse findings support the idea that there is no universal definition of project success.

Although substantial research has been conducted to isolate critical success factors for diverse projects, there are contradictory conclusions about which factors result in project success (Albert et al., 2017; Jugdev & Müller, 2005). However, scholars agree that project success is influenced by project manager skills and approach (Alvarenga et al., 2019; Pinto & Slevin, 1988; Podgórska & Pichlak, 2019). Certification is one way to ensure that project managers acquire the knowledge and skills needed for project success (Millhollan & Kaarst-Brown, 2016). Many employers desire to hire certified project managers, pay differentials, and offer more significant promotional opportunities to the certified (Blomquist et al., 2018). Despite organizations' affinity for certified project

managers, studies do not consistently conclude that certification is a more significant predictor of favorable project results (Joseph & Marnewick, 2018). For example, Starkweather and Stevenson (2011) found that a certified project manager is no more likely to accomplish success than an uncertified project manager. Aranyossy et al. (2018) argued that the technical skills acquired from obtaining certification are essential to project success, but advanced skills such as decision making would still be needed to foster effective project performance. Project management certification is a sign of hard skills, but it is not a guarantee that the project manager will make the right decisions at the right time (Davis, 2017; Silvius et al., 2017). Despite ongoing evaluation, scholars have not agreed on a consistent way to measure the combination of hard skills and soft skills (Awan et al., 2015).

One limitation of the existing literature is that some studies introduce lists of criteria without considering time, context, and conditions (Millhollan & Kaarst-Brown, 2016). Jugdev and Müller (2005) argued that information technology project success should cover the entire project life cycle because perceptions about project success might not be known until end-users use the new product for a period. Davis (2014) found that stakeholder role is another condition that could influence perceptions of project success. Researchers accept that stakeholder expectations can influence project success because success can mean different things to different people at different times (Chipulu et al., 2019; Dağlı, 2018). As a result, the subjective notion of project success grew into categories of factors that could impact project success (Lamprou & Vagiona, 2018). Freeman and Beale (1992) conceptualized a cluster of seven investment-related factors,

which included (a) technical performance, (b) efficiency of execution, (c) stakeholder satisfaction, (d) project team member personal growth, (e) project termination completeness, (f) identifying and overcoming technical problems, and (g) project ease of use and performance.

Researchers have studied project success criteria extensively (Alias et al., 2014; Frefer et al., 2018; Pacagnella et al., 2019). Stakeholder expectations and project goals are unique and can influence how project success is measured (Amoatey & Hayibor, 2017; Müller & Jugdev, 2012; Pirozzi, 2018). Shenhar et al. (2001) classified project success using four overarching factors, including (a) project efficiency, (b) customer impact, (c) business impact, and (d) preparing for the future. Other researchers developed project success factors that address overall project outcomes, including costs, benefits realization, and risks (Keeys & Huemann, 2017; Sanchez & Terlizzi, 2017; Vasista, 2017). Jugdev and Müller (2005) took a time-based approach by grouping success factors into four eras: (a) 1960s to the 1980s when project success measures focused on project delivery, (b) 1980s to the 1990s when the focus shifted to factors that must be present, (c) 1990s to the 2000s when meeting stakeholder expectations was the focus, and (d) the 21st century when stakeholder subjectivity is critical along with addressing project outcomes from beginning to end.

When project success is discussed, it is often a comprehensive term that includes overall project results and project management approach, which contributes mixed varied definitions of project success (Ciric et al., 2021; Jugdev et al., 2013; Ul Musawir et al., 2017). However, the existing project success literature demonstrates that successful

projects meet technical specifications, achieve the mission, and satisfy stakeholder satisfactions (De Wit, 1988; Orouji, 2016; Millhollan & Kaarts-Brown, 2016). The results of this project management literature review corroborate the previous findings that project success means completing all required work on time, within budget, and customer acceptance (Davis, 2014; He et al., 2018; Pinto & Slevin, 1987).

Summary

Most project success literature has been focused on project management critical success factors, project management approach, project manager competencies, and personality traits (Costa & McCrae, 1985; Pinto & Slevin, 1987). Researchers found that project manager competence is a strong predictor of project success (Alvarenga et al., 2019). Personality traits also have a substantial effect on project success (Burrell, 2018). Although the project success documentation highlights project manager competencies and personality traits as predictors, few studies explain which of these two factors is the greatest predictor of project success.

Businesses use project management to seize and maintain competitive advantage (Henkel et al., 2019). Therefore, there is a growing need to hire and engage project managers with the technical abilities, interpersonal skills, and personal characteristics to achieve project success (Millhollan & Kaarst-Brown, 2016). This study aimed to help fill a gap in the literature by examining the effect of project managers' competencies and personality traits on project success among project managers at specific career levels. The results of this study could inform human resource decisions and future project management certification frameworks. Also, there is an opportunity to align project

management training programs with the project manager competencies and personality traits needed at certain career stages. Chapter 3 contains the methodology and research design used in this study. The discussion provided the research rationale, the target population, the participant selection process, the instruments, data collection, and analysis.

Chapter 3: Research Method

Introduction

The purpose of this quantitative nonexperimental study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. A quantitative research design was suitable for this study, which included evaluating the strength of the association between the criterion variable and multiple predictor variables. In Chapter 3, I discuss this study's research design and rationale, target population, sampling and sampling procedures, and recruitment and data collection methods. The chapter concludes with instrumentation and operationalization of constructs, threats to validity, and ethical considerations.

Research Design and Rationale

This study was a cross-sectional non-experimental quantitative research design to discover the relationship between project manager competencies, personality traits, and project success when moderated by work experience. Quantitative research is appropriate to test hypotheses and make significant predictions (Frankfort-Nachmias et al., 2019). The predictor variables were project manager competencies and personality traits. The criterion variable was project success. The moderating variable was work experience. Using a moderating variable is appropriate when seeking to understand how a third factor changes the relationship between two variables (Frankfort-Nachmias et al., 2019).

Kesmodel (2018) stated that a cross-sectional approach is applicable when studying a particular group to understand how many individuals demonstrate a specific characteristic, which was the approach in this study.

Methodology

Population

Survey data were collected from project managers using an online survey on the SurveyMonkey software platform; participants were currently or previously employed in the role of project manager for 2 years or greater. I used the PMI (n.d.) Sacramento Valley Chapter membership, which totaled 1,600, as a point of reference for the population size. Although a minimum of 2 years of experience in a project manager role was required, no project management certification or PMI membership was required. No inclusion criteria existed for this study, such as age, race, and gender. I secured adequate participation in this study.

Sampling and Sampling Procedures

The convenience sampling method was used for this quantitative study to study an available group of project managers. Convenience sampling techniques are suitable when testing an entire population is not feasible (Creswell & Creswell, 2017). Convenience sampling is advantageous when budgets and time are constrained, which was the case with this study (Creswell & Creswell, 2017). One weakness of the convenience sampling method is potential researcher bias due to selection subjectivity. However, researcher bias can be mitigated using the theoretical framework to select participants with the requisite expertise (Campbell & Stanley, 2015). Another weakness of convenience sampling is that

the sample is not representative of the population; therefore, there is less opportunity to generalize to the population. However, because the sample is a subset of project managers, the convenience sampling method provided the opportunity to apply some of this study's findings to other project managers.

For this study, the target population was 272 project managers currently or previously employed as a project manager. Fitzner and Heckinger (2010) argued that an adequate sample size optimizes time and cost while producing useful research findings. Sample size was calculated using Qualtricks software. The required sample size for this study was 150 participants using 95% confidence level with a 5% margin of error.

Procedures for Recruitment, Participation, and Data Collection

I solicited participants through social media websites, including LinkedIn, Facebook, and Amazon Mechanical Turk. In addition, I emailed the PMI leader to request permission to solicit participation through their membership. PMI did not permit member solicitation; therefore, I did not pursue that participant recruitment option further. Self-selection allowed convenience for the participants and helped manage my cost as the researcher. I collected participants' age, gender, and years of experience with a demographic questionnaire (Appendix A).

After participants accessed the survey link, they received an informed consent form including the study's eligibility requirements to participate, a voluntary participation agreement, and certification they currently work as a project manager or have previously worked as a project manager for 2 or more years. Participants were also informed that their responses would be anonymous and that they could stop the survey at

any time. The consent form stated that participants' responses would be anonymous, that no compensation would be given, and an estimated time commitment of 30–40 minutes and explained they could exit the survey whenever desired with no debriefing. The survey concluded with a statement of thanks for the participants' time and contribution to this study after which the participants were directed to an exit page. Participants were directed to an exit page if consent was not given.

Initially, data were collected to achieve 150 participants who used an electronic survey on the SurveyMonkey website. I posted the survey link to LinkedIn and Facebook platforms. In addition to using social media, the survey link was posted on the Amazon Mechanical Turk website. Participant details remained anonymous.

Instrumentation and Operational at Constructs

The instruments selected for this study included a demographic questionnaire, El-Sabaa's (2001) adapted version of Katz's (1991) three skills of effective administrators measure, the Big Five Personality Trait Short Questionnaire, and the Project Implementation Profile measure. The estimated time to complete the entire survey was 30–45 minutes.

Work Experience

Participants included project managers from various industries and private and nonprofit sectors. Tenure, or the project manager's years of experience, was the moderator in this study. The project managers' years of experience were classified as follows: (a) 2–5 years, (b) 6–10 years, (c) 11–15 years, (d) 16–20 years, and (e) over 20 years.

Three Skills of Effective Administrators Measure

El-Sabaa (2001) conceived a project manager competency framework by adapting Katz's (1991) three skills of effective administrators measure to study the skills and career path of the ideal project manager working in Egypt. The three skills of effective administrators measure was an acceptable instrument for this study because it was used to measure project managers' perceptions of the importance of a list of project manager competencies in their current or past job. El-Sabaa argued that the ideal project manager would possess 18 essential project manager skills that could be group into Katz's three categories: (a) human skills, (b) conceptual and organizational skills, and (c) technical skills. The measure was administered online through SurveyMonkey, and the time to complete this measure was approximately 15 minutes (Chen et al., 2019). I received permission from Elsevier to use the adapted three skills of effective administrators measure (Appendix C). Chen (2019) used El-Sabaa's model and reported Cronbach's α of the questionnaire data as 0.933, indicating that items on the questionnaire met internal validity. This measure has been used in previous studies with project manager populations (Chen et al., 2019). Project manager competencies have been associated with project success, which was the focus of this study (Alvarenga et al., 2018).

The scoring for the El-Sabaa (2001) project manager competency questionnaire was a five-point scale that estimated the importance of each job-related project manager competency. A sample item from this 25-item questionnaire is: "How important is communication to doing your job well?" The importance was estimated using a Likert

ordinal scale ranging from 1 to 5, with 1 meaning *least important* and 5 meaning *most important*.

Big Five Personality Trait Short Questionnaire

The Big Five Personality Trait Short Questionnaire was developed by Morizot in 2014 to examine construct validity of a short self-report scale to measure the Big Five personality traits among adolescents (2014). Ortet et al. (2017) explored the psychometric properties of this scale, used the scale with adults, and found it suitable for use with an adult population. The Big Five Personality Trait Short Questionnaire was a suitable measure for this study because it was used to measure five broad dimensions of personality that provide adequate confidence and strength in personality analyses. This scale measures the five broad categories of personality: (a) extraversion, (b) agreeableness, (c) openness to experience, (d) conscientiousness, and (e) neuroticism (Costa & McCrae, 1985). The test content was used for research and educational purposes without seeking written permission and was administered through the SurveyMonkey platform and the Amazon Mechanical Turk website (Morizot, 2014; SurveyMonkey, n.d.). The time to complete the Big Five Personality Trait Short Questionnaire was approximately 15 minutes. According to Ortet (2017, p. 10), the coefficient alphas ranged from .75 to .85 and test-retest correlations ranged from .72 to .93 ($p < .001$). Personality has been linked to project success, which was the focus of this study (Moura et al., 2019).

The Big Five Personality Trait Short Questionnaire has 50 items, 10 for each trait. A sample item from this 50-item questionnaire is: “I see myself as someone who has a lot

of imagination." Participants used a 5-point Likert ordinal scale (totally disagree = 1, disagree a little = 2, neutral opinion = 3, agree a little = 4, totally agree = 5). Twenty-one of 50 items were reverse coded, including the following example: "I see myself as someone who is reserved or shy, has difficulty approaching others."

Project Implementation Profile Measure

Pinto and Slevin (1988) developed the Project Implementation Profile in 1988 to measure project success. Pinto and Slevin (1986) developed a diagnostic instrument for project managers including the following 10 critical success factors: (a) project mission, (b) top management support, (c) project schedule/plan, (d) client consultation, (e) personnel, (f) technical tasks, (g) client acceptance, (h) monitoring and feedback, (i) communication, and (j) troubleshooting. The Project Implementation Profile was an appropriate measure for this study because measuring project success was the focus of this study. The Project Implementation Profile was administered electronically on the SurveyMonkey platform. The estimated time to complete this scale was approximately 10 minutes. I received permission from Dr. Pinto and Dr. Slevin to use the Project Implementation Profile in my research (Appendix B). In a study conducted by Mazur et al. (2014) the coefficient alpha was .93. The Project Implementation Profile has been used in studies with project managers (Pinto & Prescott, 1988; Pinto & Slevin, 1987).

The Project Implementation Profile scoring was a seven-point scale that estimated the importance of each job-related project manager competency. A sample item from this 25-item questionnaire is: "How important is communication to doing your job well?" The

rating for each question was measured using a Likert ordinal scale ranging from 1 to 7, with 1 meaning *strongly agree* and 7 meaning *strongly disagreed*.

Data Analysis Plan

In this study, I used simple regression to determine if project success could be predicted based on project manager competencies, personality, and work experience. Before conducting the data analysis, I cleaned the data. Data cleaning refers to procedures for locating and excluding data that could result in distorted data leading to a Type I or Type II error (Frankfort-Nachmias et al., 2015). I reviewed and removed improperly formatted, duplicated, incorrect, or incomplete data to ensure study validity. The data were downloaded from SurveyMonkey and inputted into SPSS 28 to identify and clean duplicated, inaccurate, and partially completed responses. SPSS allowed me to evaluate the data for extreme scores, z scores, and normal distribution of scores. I eliminated incomplete responses to improve the data analysis process.

Research Questions and Hypotheses

The following research questions and hypotheses guided this quantitative study:

RQ1: Do project manager competencies as assessed by the three skills of effective administrators measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$1: Project manager competencies do not predict project success.

H_a1: Project manager competencies do predict project success.

RQ2: Do personality traits as assessed by the Big Five personality measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$2: Personality traits do not predict project success.

H_a2: Personality traits do predict project success.

RQ3: Does work experience as assessed by a project manager's years of experience predict project success as assessed by the Project Implementation Profile measure?

$H_0$3: Work experience does not predict project success.

H_a3: Work experience does predict project success.

RQ4: To what extent do project manager competencies as assessed by the three skills of effective administrators measure and personality traits as assessed by the Big Five personality measure contribute uniquely to predicting project success as assessed by the Project Implementation Profile measure?

$H_0$4: Project manager competencies and personality traits do not contribute uniquely to predicting project success.

H_a4: Project manager competencies and personality traits do contribute uniquely to predicting project success.

RQ5: Does work experience as measured by a project manager's years of experience moderate the relationship between project manager competencies as assessed by the three skills of effective administrators measure and project success as assessed by the Project Implementation Profile measure?

$H_0$5: Work experience does not moderate the relationship between project manager competencies and project success.

H_a5: Work experience does moderate the relationship between project manager competencies and project success, such that the relationship between project manager competencies and project success will be more strongly positive at greater project manager years of experience than at lower project manager years of experience.

RQ6: Does work experience as measured by a project manager's years of experience moderate the relationship between personality traits as assessed by the Big Five personality measure and project success as measured by the Project Implementation Profile measure?

H_06: Work experience does not moderate the relationship between personality traits and project success.

H_a6: Work experience does moderate the relationship between personality traits and project success, such that the relationship between personality traits and project success will be more strongly positive at greater project manager years of experience than at lower project manager years of experience.

Detailed Analysis Plan

SPSS 28 was used to test this study's hypotheses. SPSS was used to perform regression analysis to investigate the relationship between the variables and to compute demographics. Survey responses were scored and used to conduct the data analysis. Simple linear regression and hierarchical multiple regression were used to investigate project manager competencies and personality traits to determine which of these two factors is the greatest predictor of project success. Simple regression was used to assess if

project manager competencies predict project success, if personality traits predict project success, and if work experience predicts project success.

I used hierarchical multiple regression to assess how project manager competencies and personality contribute uniquely to predicting project success when moderated by work experience (Hayes, 2017). Inputting predictor variables in a specific order will determine the additional importance one or more predictor variables have on the criterion variable, which was the aim of this study (Williams et al., 2020). After mean centering with SPSS, I performed the hierarchical multiple regression in steps. First, I entered the criterion variable (project success). Next, I entered the predictor variables (project manager competencies, personality traits) to ensure that the predictor variables did not explain away the magnitude of work experience's effect on project success (Hayes, 2017). Lastly, I entered the moderating variable (work experience, project manager's years of experience), which enabled me to analyze the moderation effect (William et al., 2020).

Threats to Validity

External Validity

External validity addresses the extent to which research findings can be generalized to the other population and at other times. (Frankfort-Nachmias et al., 2015). Threats to external validity could include selection bias or participants learning something from a pre-test that influences their interaction with a subsequent test (Creswell & Creswell, 2017). One external threat to the validity of this study was the use of the convenience sampling method due to the potential for researcher bias. However,

convenience sampling is appropriate when a researcher seeks to study a specific group of experts within a population instead of studying a randomly sampled group of individuals, which was the aim of this study (Creswell & Creswell, 2017). A second threat to external validity was the lack of a representative sample given the convenience sampling method. However, this study's convenience sample was project managers, which allows the research findings application in other settings involving project managers.

Internal Validity

Results could be attributed to chance when a study lacks internal validity (Campbell & Stanley, 2015). Internal validity addresses the extent that an instrument measures an intended construct (Creswell & Creswell, 2017). I minimized threats to content validity using instruments with known construct validity and assessed Cronbach's alpha.

Ethical Procedures

I considered ethical procedures for this study, including consent, privacy and confidentiality, human relations, and record-keeping (American Psychological Association, n.d.). First, I received permission to conduct this study through the Walden IRB. Second, participation was voluntary, anonymous, and confidential. I did not request participants' personal information. I provided informed consent to ensure that participants understood their voluntary involvement and that they could discontinue participation at any stage before the study began. There were no power relationships, given that participation is anonymous and confidential. I kept all data private and confidential from beginning to end. The data were stored safely on a password-protected

computer locked in my home office. No other user could access the computer where the private and confidential data were stored. I established a mechanism to keep data secure for seven years before deletion.

Summary

The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. El-Sabba's adaption of Katz's 25-item three skills of effective administrators instrument measured the project manager competencies variable. The 50-item Big Five Personality Trait Short Questionnaire assessed personality traits. The 62-item Project Implementation Profile measured the project success variable. Project manager's years of experience) assessed work experience and was the moderating variable in this study. Using SPSS 28.0, I analyzed demographic statistics. I performed simple linear regression to assess if project manager competencies predict project success, personality traits predict project success, and work and experience predict project success. Then I conducted hierarchical multiple regression to investigate project manager competencies and personality traits to determine which of these two factors is the most significant predictor of project success when moderated by work experience (project manager's years of experience). I identified ethical considerations, including voluntary participation, informed consent, privacy, confidentiality, avoiding harm, data

collection and storage, and record-keeping. Chapter 4 provides the details of this study's data collection, data analysis, and results.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. The predictor variables were project manager competencies and personality traits. The criterion variable was project success. The moderating variable was work experience.

The following research questions and hypotheses guided this quantitative study:

RQ1: Do project manager competencies as assessed by the three skills of effective administrators measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$1: Project manager competencies do not predict project success.

H_a1: Project manager competencies do predict project success.

RQ2: Do personality traits as assessed by the Big Five personality measure predict project success as assessed by the Project Implementation Profile measure?

$H_0$2: Personality traits do not predict project success.

H_a2: Personality traits do predict project success.

RQ3: Does work experience as assessed by a project manager's years of experience predict project success as assessed by the Project Implementation Profile measure?

$H_0$3: Work experience does not predict project success.

H_a3: Work experience does predict project success.

RQ4: To what extent do project manager competencies as assessed by the three skills of effective administrators measure and personality traits as assessed by the Big Five personality measure contribute uniquely to predicting project success as assessed by the Project Implementation Profile measure?

$H_0$4: Project manager competencies and personality traits do not contribute uniquely to predicting project success.

H_a4: Project manager competencies and personality traits do contribute uniquely to predicting project success.

RQ5: Does work experience as measured by a project manager's years of experience moderate the relationship between project manager competencies as assessed by the three skills of effective administrators measure and project success as assessed by the Project Implementation Profile measure?

$H_0$5: Work experience does not moderate the relationship between project manager competencies and project success.

H_a5: Work experience does moderate the relationship between project manager competencies and project success, such that the relationship between project manager competencies and project success will be more strongly positive

at greater project manager years of experience than at lower project manager years of experience.

RQ6: Does work experience as measured by a project manager's years of experience moderate the relationship between personality traits as assessed by the Big Five personality measure and project success as measured by the Project Implementation Profile measure?

$H_0$6: Work experience does not moderate the relationship between personality traits and project success.

H_a6: Work experience does moderate the relationship between personality traits and project success, such that the relationship between personality traits and project success will be more strongly positive at greater project manager years of experience than at lower project manager years of experience.

In this chapter, I detail the study's sample demographic characteristics and data collection actions and provide an explanation of the data analysis. This chapter also includes descriptive statistics and detailed information about the results of the study.

Data Collection

Timeframe

Anonymous data collection began on June 1, 2022, after IRB approval (04-20-22-0431971 expiring on April 19, 2023) to study an available group of project managers. Originally, I built and posted an online survey with informed consent on the SurveyMonkey website to collect the data. The estimated data collection period was 30

days. I did not collect any distinguishable information from participants. I continued data collection until I received the target number of participants.

Recruitment and Response Rate

I invited respondents to participate in the study by posting the recruitment information and the link to the survey on LinkedIn and Facebook platforms. I submitted a request to the Sacramento Valley Chapter of PMI to share the participant recruitment information; however, PMI policy did not allow this practice. Participants received informed consent information after they accessed the survey link. The informed consent form included the study's eligibility requirements, a voluntary participation agreement, and certification they currently work as a project manager or have previously worked as a project manager for 2 or more years. The informed consent explained that participants' responses would be anonymous and that they could stop the study anytime. The consent form also stated there was no compensation, provided the estimated time to complete the survey, noted the exit procedures, and delivered a thank you. Participants were redirected to an exit page if they did not provide their consent. The participants were also told they could access the final study at https://scholarworks.waldenu.edu/dissertations/.

By August 6, only 48 responses had been received on the SurveyMonkey platform. After a low response rate, I received IRB approval to use Amazon Mechanical Turk, the Walden Participant Pool website, Twitter and Instagram social media platforms, and word of mouth to invite additional participants. Upon IRB approval of these additions, I published the online survey link on Amazon Mechanical Turk. The Amazon Mechanical Turk posting included a survey description and participation qualifications. I

needed to recruit 102 participants to achieve the required sample size. I updated Amazon Mechanical Turk to allow 132 participants to access and take the survey because a preliminary assessment revealed several of the previously collected surveys had significant missing data. One hundred seventy-one additional participants accessed the study because I incorrectly believed that Amazon Mechanical Turk system would block access to any participants beyond 132 participants. Each respondent was rewarded $8.00 for participation. I reached the sample size on September 5. The total number of collected responses was 352. The estimated Amazon Mechanical Turk total cost was $2,784.00 at the time of writing. I closed the SurveyMonkey survey link on September 5, 2022.

Data Preparation Process

Of the total 352 collected responses, 272 (77%) were used for data analysis, which meets the required 150 participant size of $N = 150$ ($1 - \beta = .95$). For data cleaning and screening, I used Microsoft Excel to evaluate the data for missing, inaccurate, or incomplete responses. I excluded any case where there were missing data for at least one variable in the analysis, which led to discarding 80 incomplete responses. After the screening and cleaning process in Microsoft Excel, I uploaded the remaining 272 scores to SPSS 28 to reverse code 22 questions on the Big Five Personality Trait Short Questionnaire. Once reverse coding was complete, I used SPSS to perform mean centering for the project manager competencies and Big Five personality traits. Hayes (2017) argued that mean centering makes the regression coefficients more meaningful. Finally, I investigated and found three outliers using the SPSS explore function. Although the observations were unusual, I retained the outliers at this stage because these

observations could be informative. Moreover, I decided to keep the outliers because I did not want the model to become illegitimately more predictive than it was by removing the outliers (Roberts, 2010). This study's required sample size was 150; therefore, the final 272 participants were sufficient to proceed with the rest of the data analysis process.

Sample Demographic Characteristics

I collected demographic information, including age, gender, and project manager years of experience. The gender categories were men, women, no specification, or no reply. The age categories ranged from 18 to 65. Project manager years of experience categories ranged from 2 years to over 20 years. The study's demographic information and distribution were investigated using the SPSS descriptive statistics function. The sample consisted of 272 participants, 144 men (52.9%) and 128 women (47.1%) participants (see Table 1), which is comparable to the population of interest. The study's statistic for women is higher than the Zippia's (n.d.), which could be tied to an increase in diversity, equality, and inclusion efforts (Norberg & Johansson, 2021). According to Zippia (n.d.), 37.9% of project managers in the United States are women, and 62.1% are men. The highest number of respondents were in the age range 30–39 (n = 111, 40.8%). The other age categories were 18–29 (n = 71, 26.1%), 40–49 (n = 48, 17.6), 50–59 (n = 34, 12.5%), and 60–65, (n = 8, 2.9%). The highest number of responses for work experience (project manager years of experience) category was 2–5 years (n = 125, 46%). The remaining categories for work experience were 6–10 years (n = 98, 36%), 11–15 years (n = 31, 11.4%), 16–20 years (n = 9, 3.3%), and over 20 years (n = 9, 3.3%).

Table 1

Sample Demographics

Demographic variables	Respondents (N = 272)	%
Gender		
Women	128	47.1
Men	144	52.9
Age		
18–29	71	26.1
30–39	111	40.8
40–49	48	17.6
50–59	34	12.5
60–65	8	2.9
Work experience		
2–5 years	125	46
6–10 years	98	36
11–15 years	31	11.4
16–20 years	9	3.3
Over 20 years	9	3.3

Descriptive Statistics

I used SPSS 28 to test the study hypotheses and compute demographics. The original data analysis plan called for using Hayes' (2017) PROCESS macro to perform regression analysis to investigate project manager competencies and personality traits to determine which of these two factors is the greatest predictor of project success. However, I opted to use SPSS 28 to conduct all steps of the regression analysis. Table 2 displays the study's demographic mean, standard deviation, skewness, and kurtosis.

Table 2

Study Demographic Mean, Standard Deviation, Skewness, and Kurtosis

	Mean	Std. dev.	Skewness	Kurtosis
Gender	.47	.50	.119	–2.00
Age	44	1.06	.68	–.25
Work experience	1.82	.98	1.41	1.89
Project manager competencies	17.19	2.44	–1.26	1.89
Big Five personality trait extraversion	37.05	6.38	–.52	1.55
Big Five personality trait agreeableness	33.87	7.02	1.01	–.14
Big Five personality trait openness to experience	39.24	5.11	–1.03	2.07
Big Five personality trait conscientiousness	35.88	7.98	.61	–1.08
Big Five personality trait neuroticism	31.10	8.85	.65	–.62
Project success	61.85	8.49	–1.25	3.80

Test of Assumptions

I tested all related assumptions before performing the hierarchical linear regression. The first assumption of hierarchical multiple regression requires one continuous criterion variable. This study's criterion variable, project success, is an interval variable that can take an infinite set of values, which satisfies the first assumption. The second assumption is that two or more independent variables are an interval or ratio scale (Creswell & Creswell, 2017). This study's predictor variables, project manager competencies and Big Five personality traits, are interval variables that meet the second hierarchical multiple regression assumption.

The remaining six other assumptions of hierarchical multiple regression are used to validate how well the data fit the hierarchical multiple regression model. The third assumption is that observations are predictor or unrelated (Hayes, 2017). Therefore, I used the Durbin-Watson statistic in SPSS to test for first order autocorrelation. I entered the data in SPSS in the sequence I assumed autocorrelation would occur. Scholars consider it acceptable to have the Durbin-Watson value of approximately 2 to indicate no

correlation between residuals (Subhi & Al Azkiya, 2022). Residuals were predictor as assessed by a Durbin-Watson statistic of 2.06.

The fourth assumption is a linear relationship between the criterion variable, each predictor variable, and the criterion variable and the predictor variables collectively. I tested the linearity between project success (criterion variable) and project management competencies (predictor variable) and Big Five personality traits (predictor variable) by generating SPSS scatterplots. The scatterplot presented in Figure 1 shows a horizontal relationship between project success and the predictor variables collectively. The scatterplots in Figures 2–8 show moderate to strong linear relationships between project success and the predictor variables, project manager competencies and Big Five personality traits extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism, and the moderator variable work experience (project manager years of experience).

Figure 1

Scatterplot of Residuals Showing a Linear Relationship Between Project Success and Project Manager Competencies and All Big Five Personality Traits

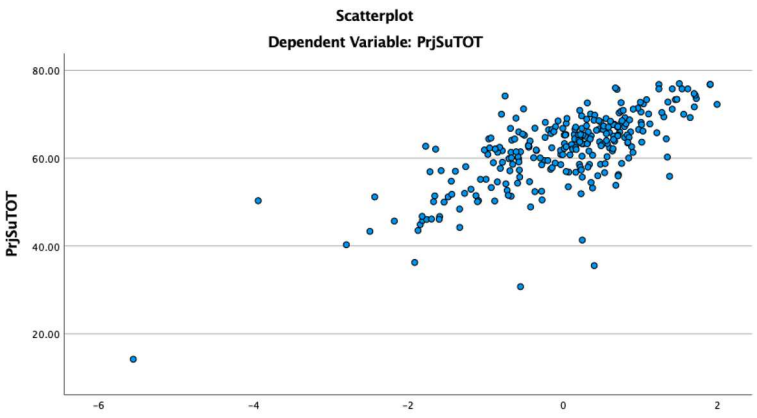


Figure 2

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Project Manager Competencies

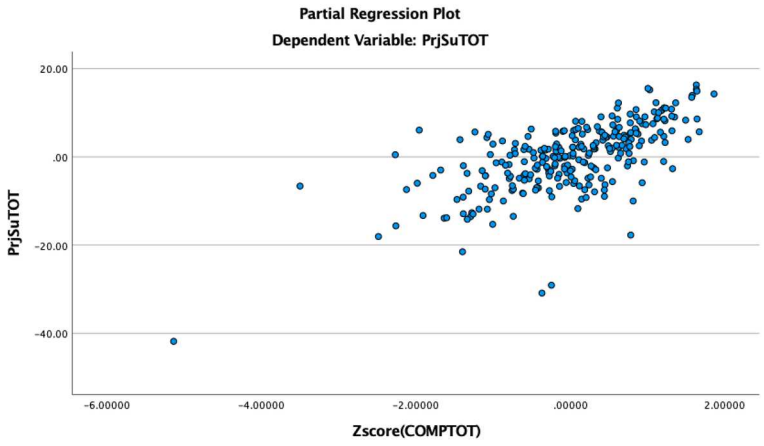


Figure 3

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Big Five Personality Trait Extraversion

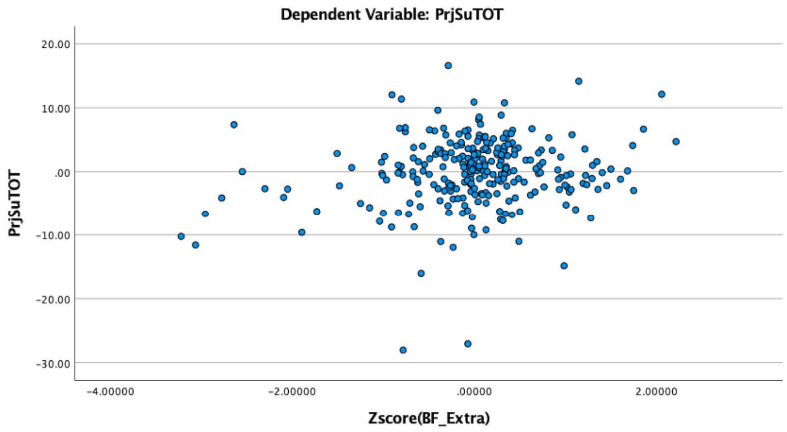


Figure 4

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Big Five Personality Trait Agreeableness

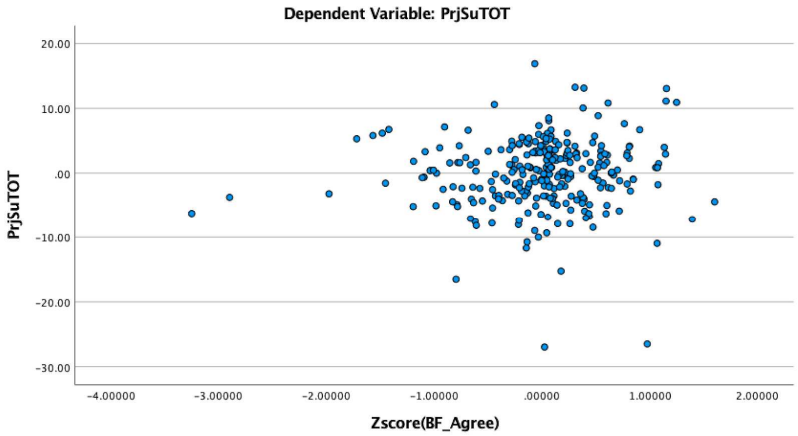


Figure 5

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Big Five Personality Trait Openness to Experience

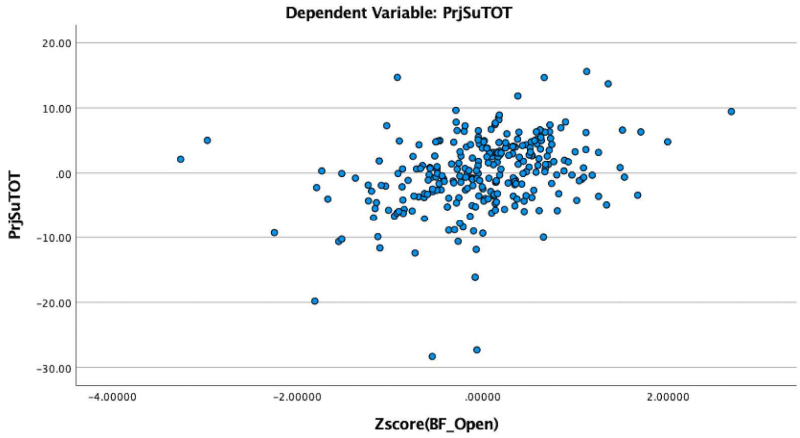


Figure 6

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Big Five Personality Trait Conscientiousness

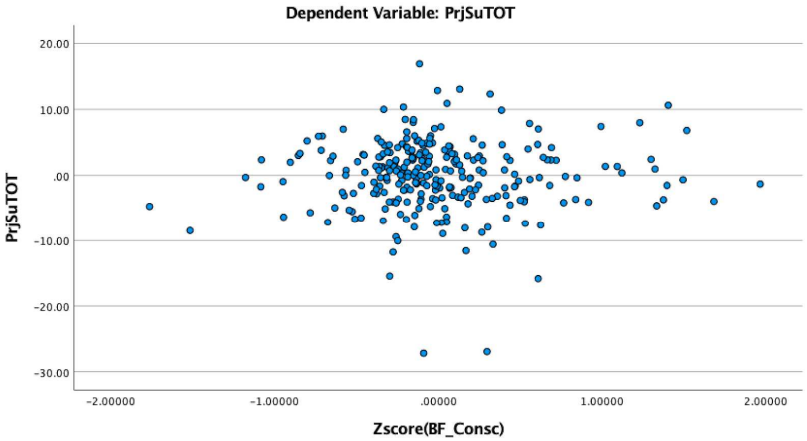


Figure 7

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Big Five Personality Trait Neuroticism

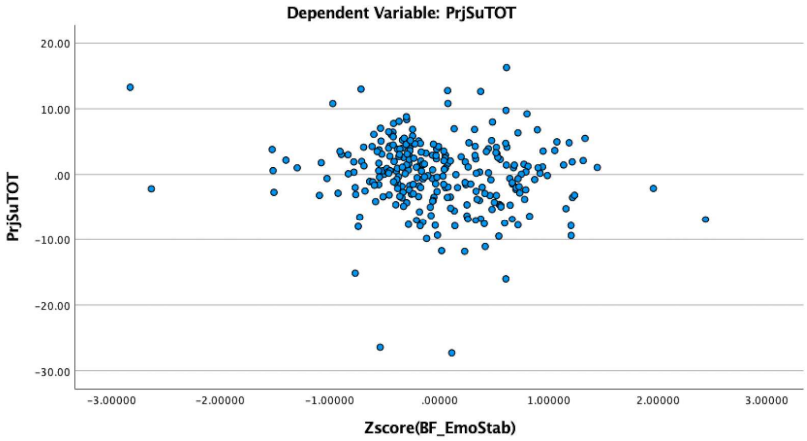
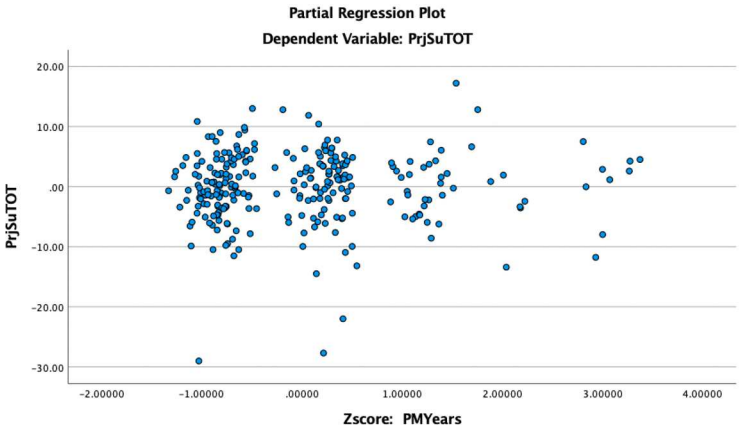


Figure 8

Scatterplot of Residuals Showing a Moderate to Strong Linear Relationship Between Project Success and Work Experience, Project Manager Years of Experience



The fifth assumption, homoscedasticity is that the residuals are equal for all values of the predicted criterion variable (Berry, 1993). Homoscedasticity assumes that the residuals are equal for all values of the predicted criterion variable (Berry, 1993). Berry (1993) argued that homoscedasticity exists if the residuals appear randomly scattered. I used the SPSS scatterplot illustrated in Figure 1 to determine to validate whether the homoscedasticity assumption was met. The spread of the residuals did not appear to increase or decrease across the predicted values, nor did they seem to form a pattern (Berry, 1993). Therefore, I concluded the homoscedasticity assumption was met.

The sixth assumption is that a study's data must not show multicollinearity or highly correlated variables. Statisticians argue that multicollinearity can lead to challenges with interpreting which predictor variable contributes to the variance explained in the criterion variable and calculating a hierarchical multiple regression model (Berry, 1993). I used the SPSS Linear Regression function to inspect the

correlation coefficients and tolerance/variance inflation factors (VIF) values. I validated that all correlations were no greater than 0.7 and all the VIF values were less than 10, demonstrating confidence that there was no collinearity in the study's dataset

Due to their potential impact on the hierarchical multiple regression analysis, the seventh assumption indicates there should be no significant outliers, high leverage points, or highly influential points. I examined the casewise diagnostics and the student deleted residuals to identify outliers. I assessed the dataset for three identified outlying cases. Although unusual, I found a plausible pattern to explain two cases. Two participants with unusually lower ratings of project success consistently selected the rating of 1 when others chose 7, or they selected 2 when others selected 6, and so on. Understanding the potential cause of these two outliers will be helpful when interpreting hierarchical linear regression output. Regarding the third outlying case, the participant's project success rating seemed to follow a natural pattern of variation, which I found informative enough to keep the case in the regression model when testing the outlier assumption (Creswell and Creswell, 2017).

Scores with high leverage points can adversely impact the eighth assumption. Scholars consider values less than 0.2 as safe, 0.2 to less than 0.5 as risk, and values greater than 0.5 as dangerous (Berry, 1993). I used the SPSS Linear Regression function to check for high leverage points. All three outlying cases had leverage scores lower than 0.2, which satisfied the leverage aspect of the eighth assumption.

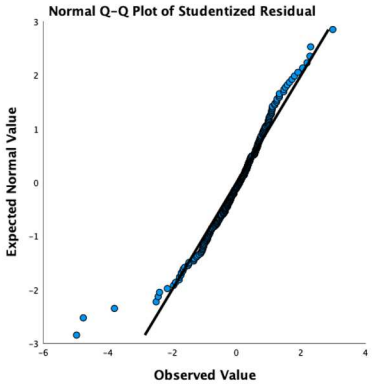
I also used the SPSS linear regression function to investigate influence. Experts suggest exploring Cook's distance values greater than 1 (Berry, 1993). No Cook's

Distance values were greater than 1 in this study, which satisfies the eighth hierarchical linear regression assumption.

Lastly, I used the SPSS Normal Q-Q Plot of the studentized residuals (SRE_1) to test for normal distribution before interpreting the hierarchical linear regression results. Scholars argue that normally distributed residuals will align along the diagonal line (Berry, 1993). The Q-Q Plot displayed the residuals close enough to the line to be considered normal, as illustrated in Figure 5.

Figure 9

Q-Q Plot of Normal Distribution



Data Analysis

Although previously validated, I measured Cronbach's alpha for each multi-item instrument used in this study. Reliability is critical to ensure the scale items evaluate the same underlying construct (Creswell & Creswell, 2017). Table 3 illustrates that all scales had a high level of internal consistency, as determined by a Cronbach's alpha of 0.927 or greater.

Table 3

Cronbach's Alpha of Each Scale

	N. scale	Mean	Std. dev.	Cronbach's alpha
Project manager competencies	18	17.19	2.44	.92
Big Five personality traits	50	17.71	2.67	.95
Project success	62	61.85	8.49	.97

Note. $N = 272$

Table 4

Pearson Correlations Between the Criterion, Predictor and Moderator Variables

Variables		1	2	3	4	5	6	7	8
Project success	Criterion	–							
Project manager competencies	Predictor	.70	–						
Big Five extraversion trait	Predictor	.45	.38	–					
Big Five agreeableness trait	Predictor	.22	.15	.28	–				
Big Five openness to experience trait	Predictor	.63	.53	.48	.29	–			
Big Five conscientiousness trait	Predictor	.25	.21	.30	.78	.35	–		
Big Five neuroticism trait	Predictor	.06	.05	.32	.60	.15	.72	–	
Work experience	Moderator	–.02	–.10	.05	.11	–.02	.12	.18	–

Note. $N = 272$. *Correlation is significant at 0.05 level (1-tailed); **Correlation is significant at 0.01 level (1-tailed).

Research Questions and Hypotheses

I used the SPSS 28.0 Linear Regression function to test this study's hypotheses. I performed simple regression to assess whether project manager competencies predict project success, whether personality traits predict project success, and whether work and experience predict project success. I also completed hierarchical linear regression to determine if project success could be predicted based on project manager competencies and personality when moderated by work experience (project manager's years of experience). As mentioned earlier, I prepared for the linear regression by downloading the SurveyMonkey data for 352 participants and inputting it into SPSS to identify

duplicate, incomplete, outlying clean scores. I removed incomplete data that could result in distorted data leading to a Type I or Type II error to ensure the validity of this study (Frankfort-Nachmias et al., 2015).

As mentioned previously, I performed several procedures including mean centering to prepare the data for the hierarchical linear regression analysis. Next, I investigated project manager competencies and personality traits to determine which of these two factors is the greatest predictor of project success when moderated by work experience (number of years in a project manager role). Scholars recommend using hierarchical linear regression, also known as sequential regression, to test the additional importance of one or more predictor variables in predicting the criterion variable, which was the focus of this study (Creswell & Creswell, 2017; Hayes, 2017). What follows is the statistical analysis for each research question and related hypotheses.

RQ1

RQ1: Do project manager competencies as assessed by the three skills of effective administrators measure predict project success as assessed by the Project Implementation Profile measure?

The goal of RQ1 was to determine if project manager competencies predict project success. I used simple regression in SPSS to investigate RQ1. The linear regression results indicated that project manager competencies statistically significantly predicted project success, $F(1, 270) = 272.19$, $p < .001$. The adjusted $R^2 = .50$, which means that project manager competencies accounted for 50% of the variation in project success, which is a medium size effect according to Cohen (1992). The results confirmed

rejecting the null hypothesis and accepting the alternative hypothesis that project manager competencies predict project success. Table 5 illustrates the simple regression results for RQ1.

Table 5

Simple Regression Results for All Variables

Variable	*B*	*SE B*	β	Adj. R^2	*p*
Project manager competencies	2.46	.14	.70	.50	<.001
Big Five extraversion trait	.60	.07	.45	.20	<.001
Big Five agreeableness trait	.27	.07	.22	.04	<.001
Big Five openness to experience trait	1.04	.07	.63	.39	<.001
Big Five conscientiousness trait	.26	.06	.25	.05	<.001
Big Five neuroticism trait	.06	.05	.06	.01	.26
Work experience	–.18	.52	–.02	.01	.72

RQ2

RQ2: Do personality traits as assessed by the Big Five personality measure predict project success as assessed by the Project Implementation Profile measure?

The aim of RQ2 was to determine if each of the Big Five personality traits predicts project success. I used simple regression to answer RQ2.

Extraversion. The linear regression results indicated that Big Five personality extraversion trait statistically significantly predicted project success, $F(1, 270) = 69.36$, $p < .001$. The adjusted R^2 result was .20, which means that the extraversion trait accounted for 20% of the variation in project success, which is considered a small size effect (Cohen, 1992). For the extraversion trait, the results supported rejecting the null hypothesis and accepting the alternative hypothesis that the extraversion Big Five personality trait predicts project success. Table 5 illustrates the simple regression results

for the extraversion Big Five personality trait and the remaining Big Five personality traits tested for RQ2.

Agreeableness. The linear regression results indicated that Big Five personality agreeableness trait statistically significantly predicted project success, $F(1, 270) = 14.71$, $p < .001$. The adjusted R^2 result was .04, which means that the agreeableness trait accounted for 4% of the variation in project success, which is a small size effect (Cohen, 1992). The results supported rejecting the null hypothesis and accepting the alternative hypothesis that the agreeableness Big Five personality trait predicts project success. The agreeableness regression results are shown in Table 5.

Openness to Experience. The linear regression results indicated that Big Five personality openness to experience trait statistically significantly predicted project success, $F(1, 270) = 177.76$, $p < .001$. The adjusted R^2 result was .39, which means that the openness to experience trait accounted for 39% of the variation in project success, which is a medium size effect according to Cohen (1992). The results supported rejecting the null hypothesis and accepting the alternative hypothesis that the openness to experience Big Five personality trait predicts project success. The openness to experience regression results are shown in Table 5.

Conscientiousness. The linear regression results indicated that Big Five personality conscientiousness trait statistically significantly predicted project success, $F(1, 270) = 18.11$, $p < .001$. The adjusted R^2 result was .05, which means that the conscientiousness trait accounted for 5% of the variation in project success, which is a small effect size (Cohen, 1992). The results supported rejecting the null hypothesis and

accepting the alternative hypothesis that the conscientiousness Big Five personality trait predicts project success. The conscientiousness regression results are shown in Table 5.

Neuroticism. The linear regression results indicated that Big Five personality neuroticism trait did not statistically significantly predict project success, $F(1, 270) = 1.26$, $p < .26$. The adjusted R^2 result was 0.01, which means that the neuroticism trait accounted for 0.1% of the variation in project success, which is a small effect size (Cohen, 1992). The results confirmed accepting the null hypothesis that neuroticism Big Five personality trait does not predict project success. Table 5 shows the neuroticism regression results.

RQ3

RQ3: Does work experience as assessed by a project manager's years of experience predict project success as assessed by the Project Implementation Profile measure?

The goal of RQ3 was to determine if work experience (project manager's years of experience) predicts project success. I used simple regression in to assess RQ3. The linear regression results indicated that work experience did not statistically significantly predict project success, $F(1, 270) = .129$, $p < .720$. The adjusted $R^2 = -.01$, which means that work experience accounted for 1% of the variation in project success, which is a small size effect according to Cohen (1992). The results confirmed accepting the null hypothesis that work experience does not predict project success. Table 5 illustrates the simple regression results for RQ3.

RQ4

RQ4: To what extent do project manager competencies as assessed by the three skills of effective administrators measure and personality traits as assessed by the Big Five personality measure contribute uniquely to predicting project success as assessed by the Project Implementation Profile measure?

RQ4 aimed to determine how project manager competencies and personality traits contribute uniquely to predicting project success. I used hierarchical regression to determine the relative contribution of each predictor variable to the total variance explained for project success (Hayes, 2017). In the first step, I entered project success in the Dependent (criterion) variable field. Next, I entered project manager competencies and each standardized Big Five personality trait in the first Independent (predictor) variable Block.

The hierarchical multiple regression results confirmed that project manager competencies ($\beta = .49$, $p < .001$), extraversion ($\beta = .13$, $p < .001$), openness to experience ($\beta = .28$, $p < .001$), and neuroticism ($\beta = -.12$, $p = .04$) predictors contributed to the total variance explained for project success illustrated in Model 1 in Table 6. However, agreeableness and conscientiousness did not uniquely contribute to project success. Therefore, I accepted the alternative hypothesis that project manager competencies, extraversion, openness to experience, and neuroticism personality traits contribute uniquely to predicting project success, but I accepted the null hypothesis for agreeableness and conscientiousness, as found in Table 6.

Table 6

Summary of Hierarchical Multiple Regression Analysis for Variables Predicting Project Success

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	*p*
Model 1				.60	.60	58.47	<.001
Constant	61.858	.32					<.001
Project manager competencies	4.21	.40	.49				<.001
Big Five extraversion trait	1.12	.39	.13				<.01
Big Five agreeableness trait	.68	.52	.08				.19
Big Five openness to experience trait	2.43	.43	.28				<.001
Big Five conscientiousness trait	.21	.64	.02				.74
Big Five neuroticism trait	–1.04	.50	–.12				.04
Model 2				.62	.02	33.67	.02
Constant	61.75	.33					<.001
Project manager competencies	4.03	.40	.47				<.001
Big Five extraversion trait	.97	.40	.11				.01
Big Five agreeableness trait	.48	.52	.05				.35
Big Five openness to experience trait	2.56	.43	.30				<.001
Big Five conscientiousness trait	.37	.63	.04				.55
Big Five neuroticism trait	–1.07	.50	–.12				.03
Project manager competencies * Work experience	.20	.35	.02				.56
Big Five extraversion trait * Work experience	–.11	.06	–.51				.09
Big Five agreeableness trait * Work experience	.43	.50	.06				.39
Big Five openness to experience trait * Work experience	.05	.07	.25				.49
Big Five conscientiousness trait * Work experience	.06	.08	.31				.44
Big Five neuroticism trait * Work experience	.29	.56	.04				.59

Note. Model = "Enter" method in SPSS; *B* = unstandardized regression coefficient; *SE B* = standard of the coefficient; β = standardized coefficient; Adjusted (Adj.) R^2 = coefficient of determination; $\Delta R^2 = R^2$ change.

In addition to assessing how each predictor variable contributed to the total variance of project success, I used this hierarchical multiple regression to evaluate which predictor variable is the strongest predictor of project success. The regression results indicated project manager competencies (β = .49, $p < .001$) explained 49% of the variance in project success, which was a stronger predictor of project success than extraversion (β = .13, $p < .001$), which explained 13% of the variance in project success, openness to experience (β = .28, $p < .001$), which explained 28% of the variance in project success, and neuroticism (β = -.12, $p = .04$), which explained 12% of the variance in project success.

The full hierarchical multiple regression model of project manager competencies, personality traits, and work experience (project manager's years of experience) to predict project success was statistically significant, $R^2 = .62$, $F(13, 258) = 33.67$, $p < .001$, adjusted $R^2 = .61$. The regression results indicated that adding work experience (project manager's years of experience) did improve explaining the variance in project success (criterion variable) above and beyond project manager competencies and personality traits (predictor variables). Table 5 includes a summary of all the hierarchical regression results.

Experts argue that understanding the importance of the added predictor variables in a hierarchical multiple regression model is more important than predictions (Gelman, 2007). Therefore, I used R^2 to answer RQ4 because R^2 represents the variation in the criterion variable explained by the predictor variables (Gelman, 2007). However, it is customary to report the final model coefficients of the hierarchical multiple regression model. Therefore, Table 5 also includes the coefficients or the change in the criterion variable (project success) for a one-unit change in the predictor variable (project manager competencies, personality traits).

RQ5

RQ5: Does work experience as measured by a project manager's years of experience moderate the relationship between project manager competencies as assessed by the three skills of effective administrators measure and project success as assessed by the Project Implementation Profile measure?

For RQ5, I conducted moderation analysis to assess if work experience moderated the relationship between project manager competencies and project success. Based on Tesluk and Jacobs' (1998) theory of work experience, years of experience (tenure) is not a strong predictor of job performance. However, Tesluk and Jacobs (1998) argued that competence could sometimes increase over time due to repeated exposure to tasks. First, I calculated the moderation interaction term using SPSS to compute the product between project manager competencies and work experience (project manager's years of experience) before conducting the regression. Next, I added the moderation interaction term into the second step of the regression model to determine if work experience moderated the relationship between project manager competencies and project success. The full moderated hierarchical multiple regression model of project manager competencies, work experience (project manager's years of experience), and the interaction between project manager competencies and work experience to predict project success was statistically significant, $R^2 = .50$, $F(3, 268) = 91.58$, $p < .001$, adjusted $R^2 = .50$. The final regression results indicated project manager competencies ($\beta = .70$, $p < .001$) explained 70% of the variance in project success. However, the results revealed that the interaction between project manager competencies and work experience ($\beta = .04$, $p = .33$) did not improve in explaining the variance in project success (criterion variable) above and beyond project manager competencies (predictor variable). Therefore, I accepted the null hypothesis that work experience would not moderate the relationship between project manager competencies and project success. Table 7 includes a summary of the moderated hierarchical regression results for RQ5.

Table 7

Summary of Moderated Hierarchical Multiple Regression Analysis for Project Manager Competencies Predicting Project Success

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	*p*
Model 1				.50	.50	136.93	<.001
Constant	61.85	.36					<.001
Project manager competencies	6.06	.36	.71				<.001
Work experience	.42	.36	.05				.24
Model 2				.50	.01	91.58	<.001
Constant	61.89	.36					<.001
Project manager competencies	5.98	.37	.70				<.001
Work experience	.40	.36	.04				.26
Project manager competencies * Work experience	.35	.36	.04				.33

Note. Model = "Enter" method in SPSS; *B* = unstandardized regression coefficient; *SE B* = standard of the coefficient; β = standardized coefficient; R^2 = coefficient of determination; $\Delta R^2 = R^2$ change.

RQ6

RQ6: Does work experience as measured by a project manager's years of experience moderate the relationship between personality traits as assessed by the Big Five personality measure and project success as measured by the Project Implementation Profile measure?

I performed moderation analysis to determine if work experience moderated the relationship personality and project success. To evaluate RQ6, I considered how years of on-the-job experiences can provide opportunities for project managers to learn more about their individual patterns of thinking, feeling and behaving, which might improve job performance (Tesluk & Jacobs, 1998).

Like RQ5, I calculated the moderation interaction term using SPSS to compute the product between the Big Five personality traits and work experience (project

manager's years of experience) for each of the five personality dimensions before conducting the five separate regressions. Then, I added the moderation interaction term into the second step of the regression model to determine if work experience moderated the relationship between each of the Big Five personality traits and project success. The full moderated hierarchical multiple regression model of Big Five personality traits, work experience (project manager's years of experience), and the interaction between Big Five personality traits and work experience to predict project success was statistically significant, $R^2 = .47$, $F(11, 260) = 21.53$, $p < .001$, adjusted $R^2 = .45$.

Extraversion. The final regression results indicated extraversion ($\beta = .20$, $p < .001$) explained 20% of the variance in project success and the results were statistically significant. However, the results showed that the interaction between extraversion and work experience ($\beta = -.63$, $p = .08$) did not improve in explaining the variance in project success (criterion variable) beyond extraversion (predictor variable). Therefore, I accepted the null hypothesis that work experience would not moderate the relationship between extraversion and project success. Table 8 includes a summary of the moderated hierarchical regression results for extraversion.

Table 8

Summary of Moderated Hierarchical Regression Analysis for Big Five Personality Traits Predicting Project Success

Variable	*B*	*SE B*	β	R^2	ΔR^2	*F*	*p*
Model 1				.44	.44	35.13	<.001
Constant	17.70	3.35					<.001
Big Five extraversion trait	.30	.07	.23				<.001
Big Five agreeableness trait	.06	.09	.05				.48
Big Five openness to experience trait	.82	.09	.49				<.001
Big Five conscientiousness to trait	.11	.09	.10				.22
Big Five neuroticism trait	-.18	.06	-.19				<.01
Work experience	-.30	.40	.01				.94
Model 2				.47	.03	21.53	<.001
Constant	26.67	8.88					<.01
Big Five extraversion trait	.26	.07	.20				<.001
Big Five agreeableness trait	.03	.08	.02				.71
Big Five openness to experience trait	.84	.09	.50				<.001
Big Five conscientiousness trait	.14	.09	.13				.12
Big Five neuroticism trait	-.19	.06	-2.05				<.01
Work experience	-4.46	4.49	-.51				.32
Big Five extraversion trait * Work experience	-.13	.07	-.63				.08
Big Five agreeableness trait * Work experience	.58	.59	.09				.33
Big Five openness to experience trait * Work experience	.10	.09	.50				.23
Big Five conscientiousness trait *work experience	.13	.10	.62				.19
Big Five neuroticism trait * Work experience	-.15	.65	-.02				.81

Note. Model = "Enter" method in SPSS; *B* = unstandardized regression coefficient; *SE B* = standard of the coefficient; β = standardized coefficient; Adjusted (Adj.) R^2 = coefficient of determination; $\Delta R^2 = R^2$ change.

Agreeableness. The final regression results indicated agreeableness (β = .02, p = .71) explained 2% of the variance in project success and the results were not statistically significant. Moreover, the results showed that the interaction between agreeableness and work experience (β = .09, p = .33) did not improve in explaining the variance in project success (criterion variable) beyond agreeableness (predictor variable). Therefore, I accepted the null hypothesis that work experience would not moderate the relationship between agreeableness and project success. Table 8 includes the moderated hierarchical regression results for agreeableness.

Openness to Experience. The final regression results indicated openness to experience ($\beta = .50$, $p < .001$) explained 50% of the variance in project success and the results were statistically significant. However, the results showed that the interaction between openness to experience and work experience ($\beta = .50$, $p = .23$) did not improve in explaining the variance in project success (criterion variable) beyond openness to experience (predictor variable). Therefore, I accepted the null hypothesis that work experience would not moderate the relationship between openness to experience and project success. Table 8 includes the moderated hierarchical regression results for openness to experience.

Conscientiousness. The final regression results indicated conscientiousness ($\beta = .13$, $p = .12$) explained 13% of the variance in project success and the results were not statistically significant. Moreover, the results showed that the interaction between conscientiousness and work experience ($\beta = .62$, $p = .19$) did not improve in explaining the variance in project success (criterion variable) beyond conscientiousness (predictor variable). Therefore, I accepted the null hypothesis that work experience would not moderate the relationship between conscientiousness and project success. Table 8 includes the moderated hierarchical regression results for conscientiousness.

Neuroticism. The final regression results indicated neuroticism ($\beta = -20$, $p = .04$) explained 20% of the variance in project success and the results were statistically significant. However, the results showed that the interaction between neuroticism and work experience ($\beta = -02$, $p = .81$) did not improve in explaining the variance in project success (criterion variable) beyond neuroticism (predictor variable). Therefore, I accepted

the null hypothesis that work experience would not moderate the relationship between neuroticism and project success. Table 8 includes the moderated hierarchical regression results for neuroticism.

Summary and Transition

The purpose of Chapter 4 was to investigate the relationship between project manager competencies, personality traits, and project success and assess any interaction when work experience (project manager's years of experience) was added to the regression model. This chapter included the data collection and participant recruitment processes and IRB-approved modifications. As designed, I used IBM SPSS Version 28.0 to perform simple regression to assess the data, validate assumptions, and answer RQ1, RQ2, and RQ3. The results indicated that project manager competencies and the Big Five personality traits, extraversion, agreeableness, openness to experience, and conscientiousness, statistically significantly predicted project success. However, the results indicated the Big Five personality trait neuroticism and work experience (project manager's years of experience) did not predict project success.

Also, this chapter explained that project manager competencies and the Big Five personality traits, extraversion, openness to experience, and neuroticism, each uniquely contributed to predicting project success; however, agreeableness and conscientiousness did not. The results also revealed that project manager competency is a stronger predictor of project success than all the Big Five personality traits. Lastly, this chapter's moderation analysis confirmed that work experience (project manager's years of experience) did not moderate the relationship between project manager competencies and

project success. The results also showed that work experience did not moderate the relationship between any of the Big Five personality traits. Therefore, Chapter 4 provided answers to RQ4, RQ5, and RQ6.

Chapter 5 provides an interpretation of the study findings. In Chapter 5, information related to the limitations of the study and recommendations for further research are discussed. Chapter 5 also includes implications and conclusions of this research study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to provide information about the relationship between project manager competencies, personality, and project success by (a) investigating the relationship between project manager competencies, personality traits, and project success; and (b) identifying whether project competencies or personality traits is the strongest predictor of project success among project managers at different work experience levels. The predictor variables are project manager competencies and personality traits. The criterion variable is project success. The moderating variable is work experience. I analyzed the data using simple regression, hierarchical multiple regression, and moderated hierarchical multiple regression. I conducted this study because some researchers (Chen et al., 2019) suggested a need for more investigation into the role work experience plays in the relationship between project manager competencies, personality traits, and project success.

The data analysis showed that project manager competencies and personality traits statistically significantly predict project success, but project manager years of experience did not. The data analysis also revealed that project manager competencies was stronger than personality traits for predicting project success. In addition, the data analysis revealed that adding work experience (project manager years of experience) did not explain the variance in project success (criterion variable) beyond project manager competencies and personality traits (predictor variables).

Interpretation of the Findings

I surveyed 272 participants by posting a SurveyMonkey link on LinkedIn and Facebook social media platforms and a link on the Amazon Mechanical Turk website. Participants were current or previous project managers with at least 2 years of work experience. The participants provided their opinions about the relationship between project manager competencies, personality traits, work experience, and project success.

Research Question 1

RQ1 asked if project manager competencies predicted project success. I measured project manager competencies using El-Sabaa's (2001) adapted version of the three skills of effective administrators instrument. El-Sabaa grouped 18 project manager competencies into human skills, conceptual and organizational skills, and technical skills, which were linked to project success. I used El-Sabaa's 18 project manager competencies to predict project success.

One definition of project management competency is the proven ability to carry out activities exceptionally in a complex project environment, leading to anticipated results (El-Sabaa, 2001). Chen et al. (2019) found that project management knowledge and technical competence are essential and play a stable role in project success. The regression results were consistent with Chen et al. (2019) and other studies that found project manager competencies to be moderate to strong project success predictors (Ahmed & Anantatmula, 2017; Alvarenga et al., 2019). The results shown in Table 5 confirmed that the predictor variable of project manager competencies explained 50% of the criterion variable of project success, which was the aim of this study. The study

findings suggest that human skills, conceptual and organizational skills, and technical skills are vital competencies that equip project managers to effectively address the overlapping critical success factors that influence projects, such as product delivery, project management processes, and stakeholder expectations (Millhollan & Kaarts-Brown, 2016).

Research Question 2

RQ2 asked if personality traits predicated project success. I measured personality traits using the Big Five personality Trait Short Questionnaire. The Big Five personality traits framework has been used in various studies to evaluate the relationship between project manager personality and overall project results (de Moura et al., 2019; Gray & Ulbrich, 2017; Hassan et al., 2017). In this study, I used the Big Five personality Trait Short Questionnaire to measure five broad dimensions of personality that provide adequate confidence and strength in personality analyses, including extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism (Costa & McCrae, 1985).

Scholars have described personality as a preset system of thought, emotions, motivation, and behavior for every individual (Thielmann et al., 2020). In previous studies, researchers have reported that the Big Five personality traits significantly influence project success (de Moura et al., 2019; Gray & Ulbrich, 2017; Hassan et al., 2017). The regression results were consistent with studies that found some of the Big Five personality traits to be small to moderate predictors of project success (Ahmed & Anantatmula, 2017; Alvarenga et al., 2019).

Extraversion represents social ability and confidence (Costa & McCrae, 1985). The results in Table 5 confirmed that the predictor of the extraversion trait accounted for 20% of the variation in project success. These findings suggest that extraversion can impact project outcomes such as project manager performance and team performance, which are critical to overall project success (de Moura et al., 2019; Gray & Ulbrich, 2017; Hassan et al., 2017).

Agreeable individuals tend to express warmth, cooperation, and acceptance of others (Costa & McCrae, 1985). The results in Table 5 confirmed that the predictor of the agreeableness trait accounted for 4% of the variation in project success. These findings suggest that agreeableness traits, such as favoring being cooperative instead of competitive, can have a small effect on overall project success (de Moura et al., 2019; Hassan et al., 2017).

Individuals who express openness to experience tend to be creative, imaginative, and innovative (Costa & McCrae, 1985). The results in Table 5 confirmed that the predictor of the openness to experience trait explained 39% of the variation in project success. The medium-size effect of openness to experience suggests that this trait can be crucial for projects requiring revolutionary creation (Hassan et al., 2017).

Conscientious individuals tend to be responsible, organized, reliable, and goal-centered (Costa & McCrae, 1985). The results in Table 5 confirmed that the predictor of the conscientiousness trait explained 5% of the variation in project success. Despite a small effect size, conscientiousness project managers generally possess more control over

their project environments, which is a critical success factor for project success (Hassan et al., 2017).

Anxiety, self-consciousness, low self-esteem, and impulsivity describe the neuroticism trait. Poor project manager performance has been linked to higher levels of neuroticism (Aretoulis et al., 2017). The results in this study revealed that the Big Five personality trait neuroticism did not predict project success. Moreover, the results indicated the neuroticism trait accounted for only 0.1% of the variation in project success. These findings are like other studies that reported that neuroticism does not predict project success (Hassan et al., 2017). These findings are not surprising given that the neuroticism trait could lead to project manager behaviors linked to adverse project management outcomes.

Research Question 3

RQ3 asked if work experience predicted project success. I measured work experience using tenure (project manager years of experience). Tesluk and Jacobs (1998) found that tenure could provide opportunities for an individual to learn and grow in job performance. However, Tesluk and Jacobs (1998) argued that a more effective framework for work experience would involve the interaction between tenure, the number of times an individual performs a task or duty (Ford et al., 1992), and the type of work challenges and interactions that build up over time (DuBois & McKee, 1994; McCauley et al., 1994).

Because some studies found a statistically significant relationship between tenure and project success, I assessed whether tenure alone would predict project success (Luţaş

et al., 2020; Noor et al., 2020). The results indicated that work experience did not statistically significantly predict project success. Moreover, the results indicated that work experience (project manager years of experience) explains only 1% of project success. This study's results align with scholars who suggest that tenure alone may not provide project managers with the deep work assignments that lead to competency development (Tesluk & Jacobs, 1998). Also, these findings are like other studies in which researchers did not find a statistically significant relationship between project success and work experience measured as years of experience in a position (Noor et al., 2020).

Research Question 4

RQ4 asked to what extent project manager competencies and personality traits contribute uniquely to predicting project success. Studies have shown that project manager competencies and personality are predictors of project success, but it is not known which of the two variables is the most predictive of project success (El-Sabaa, 2001; Hassan et al., 2017). RQ4 aimed to determine the relative contribution of each predictor variable to the total variance explained for project success and to determine which variable was the strongest predictor of project success.

Scholars have argued that project competencies and personality traits are core assets to today's organizations (Chen et al., 2019; Millhollan & Kaarts-Brown, 2016). The final hierarchical regression model results confirmed that project manager competencies and the Big Five personality traits of extraversion and openness to experience, and neuroticism uniquely contributed to predicting project success, which aligns with other studies (Chen et al., 2019; Luţaş et al., 2020; Millhollan & Kaarts-

Brown, 2016). Project manager competencies, extraversion, and openness to experience positively affected project success, whereas neuroticism had a negative effect shown in Table 6. Scholars reported that agreeableness and conscientiousness are positive personality traits that can improve project team effectiveness (Luţaş et al., 2020; Millhollan & Kaarts-Brown, 2016). However, these two traits did not statistically significantly contribute to predicting project success in this study, as found in Table 6.

Additionally, these findings revealed that project manager competencies was the most robust predictor explaining 49% of the variance in project success. Regarding the Big Five personality traits effect on the variance in project success, extraversion explained at 13%, openness to experience explained at 28%, and neuroticism explained at 4%. This study's findings suggest that project success is influenced by what project managers know, what they can do, and who they are, which includes the positive qualities of extraversion and openness to experience, as well as the negative quality of neuroticism.

Research Question 5

RQ5 asked if work experience (project manager's years of experience) moderates the relationship between project manager competencies and project success. Research finding have varied related to the relationship between tenure and job performance (Luţaş et al., 2020; Noor et al., 2020; Tesluk & Jacobs, 1998). For example, Chen et al. (2019) called for further investigation into the moderating effect of work experience on project success. Therefore, I used project manager's years of experience in this study to determine if tenure alone would explain project success beyond what could be explained

by project manager competencies. In this study, I used hierarchical regression to determine if adding work experience (project manager's years of experience) improved the prediction of project success over and above project competencies.

Years of experience was used as a moderating variable. Some scholars report that years of experience alone have a negligible influence on job performance (Tesluk & Jacobs, 1998). The results revealed that work experience measured as a project manager's years of experience did not moderate the relationship between project manager competencies and project success. The results in Table 7 are consistent with other studies where years of experience did not moderate the relationship between individuals' skills and job performance (Noor et al., 2020; Tesluk & Jacobs, 1998). These findings revealed that the interaction between project manager competencies and work experience did not improve in explaining the variance in project success beyond project manager competencies. The results are not surprising given this study's finding that a project manager's years of experience do not predict project success.

Research Question 6

RQ6 asked if work experience (project manager's years of experience) moderates the relationship between personality traits and project success. Several researchers have found positive links between personality traits and project success (Araújo & Pedron, 2016; Henkel et al., 2019; Millhollan & Kaarts-Brown, 2016; Noor et al., 2020; Turner & Müller, 2006). To explore RQ6, I used moderated hierarchical regression to determine if adding work experience (project manager's years of experience) improved the prediction of project success over and above personality traits.

Like several scholars, this study found that years of experience did not moderate the relationship between project manager Big Five personality traits and project success shown in Table 8 (Aretoulis et al., 2017; Millhollan & Kaarts-Brown, 2016; Noor et al., 2020). I anticipated these findings because personality is considered a preset and enduring system of thought, emotions, motivation, and behavior for every individual (Thielmann et al., 2020).

Limitations of the Study

My study investigated the relationship between project manager competencies, personality traits, and project success and identified whether project manager competencies or personality was the strongest predictor of project success among project managers at different work experience levels. One external threat to the validity of this study was using a convenience sampling method due to the potential for researcher bias. A convenience sample of a specific group within a population was used rather than a randomly sampled group of individuals to understand that group's expert opinions (Creswell & Creswell, 2017). Also, using convenience sampling poses a threat to generalizability due to the lack of a representative sample. However, this convenience sample included project managers, making some of my study findings applicable to environments with project managers.

Recommendations

My quantitative, cross-sectional study involved data collection from project managers only. One recommendation is to survey project sponsors, project team members, and stakeholders. Surveying other roles within the project management

environment could provide greater insight or alternative opinions about the strongest predictor of project success.

This study used tenure, which is only one aspect of Tesluk and Jacobs' (1998) theory of work experience. I recommend further research using Tesluk and Jacobs' entire work experience framework of tenure, the number of times a task or duty has been performed, and the type of work challenges and interactions that accrue over time. Using the full Tesluk and Jacobs work experience framework could yield different results than those reported in this study.

I used the Project Implementation Profile (Pinto & Slevin, 1987) to measure project success. The project management discipline is undergoing an evolution like other professional domains. Given the changing role of project managers, technical methods, and stakeholders' expectations about project success, another suggestion is to compare this study's results to other research that used different measures of project success.

I intended my quantitative survey research design to be a first step toward identifying factors for a customizable project leadership competency model. A second step could be a qualitative study to gather project managers' own words to describe their perceptions about the influence project manager competencies and personality traits have on their project success. Obtaining data in project managers' own words would further inform a project leadership competency model.

Implications

This study has social change implications for human resources professionals, project management professionals, and project management certification organizations.

Persistent project failures exist and are not without adverse organizational and individual consequences (Gupta et al., 2019; Hassan et al., 2017). Therefore, researchers are still on the quest to understand what factors influence project success, including project manager characteristics (Maqbool et al., 2017). Therefore, this study contributes in several ways.

Research shows that competent project managers are essential to gaining and maintaining a competitive advantage (Ijaola et al., 2020). My study's results could help human resources professionals employ evidence-based project leadership competency frameworks and learning and development interventions to equip project managers capable of influencing project success in the for-profit and nonprofit sectors. Moreover, this study could inform talent acquisition decision making given that project success was statistically significantly explained by project manager competencies and three of five Big Five personality traits.

Tenure measured as project manager years of experience did not predict project success, nor did it moderate the relationship between project success and project manager competencies or three of the five Big Five personality Traits in this study. However, tenure is widely used on project manager job requisitions (Chen et al., 2019; Henkle et al., 2019). This study's finding could affect today's project manager recruitment and selection practices. For instance, when otherwise qualified individuals cannot compete for jobs due to a lack of years of experience, organizations could face a decreased candidate pool. Also, barring candidates from the opportunity to apply for positions based solely on tenure could impair their earning potential, which has been linked to several adverse quality of life outcomes (Carr et al., 2018). Therefore, human resource

professionals should reexamine tenure alone in talent recruitment and selection and consider using the type and amount of challenging work experiences (work density) proposed by Tesluk and Jacobs (1998).

Improved project manager performance would benefit organizations, individuals, project management certification associations, and communities (Holcomb et al., 2021). The results from this study could help improve project manager job performance leading to more quality goods and services offered by for-profit companies and increased social good offered to vulnerable communities. In addition to improving organizational and community outcomes, this study's findings could benefit project managers' career planning and development by pointing to evidence-based project manager competencies and personality traits most likely to predict project success. Moreover, the results of this study could help project management certifying organizations continue evolving the certification qualifications by recognizing and including the role personality plays in predicting project success.

Finally, my study contributes to the project management literature by using a single study to investigate the influence of project manager competencies and personality traits on project success among project managers at specific work experience levels (Chen et al., 2019). This study's results could provide insight into the essential project manager competencies and personality traits needed at distinct work experience levels.

Conclusion

Project managers play a significant role in project success, so improving their performance is critical (Hassan et al., 2017). Continued project failure can lead to cost

overruns, loss of market share, unmet stakeholder expectations, and impede strategic opportunities in the for-profit and nonprofit sectors (Ahmed & Anantatmula, 2017; Burrell, 2018; Hassan et al., 2017). Therefore, this study investigated the relationship between project manager competencies, personality traits, and project success and identified that project manager competencies are a stronger predictor of project success than different work experience levels. Like other scholars, I concluded that the project manager assignment could make or break project success.

What role does work experience play in project success, and how can organizations, individuals, and project management certifying bodies leverage that knowledge to improve project success? Partly because findings have been mixed, some researchers have continued to call for further investigation into the moderating effect of work experience on project success (Chen et al., 2019; Luţaş et al., 2020; Noor et al., 2020; Tesluk & Jacobs, 1998).). This study aimed to extend the project management community's knowledge by reporting that tenure alone was not a statistically significant predictor of project success. Given project managers' impact on project success, it seems prudent to understand how they can influence project success at different work experience levels.

Lastly, project success has far-reaching implications. For example, persistent project failure could deny society products, services, and programs from reaching the members of society who need those things the most (Holcomb et al., 2021). Therefore, improving project success could help organizations gain and maintain a competitive

advantage that allows them to employ individuals who deliver goods and services for a better society. I hope this study contributes to that mission.

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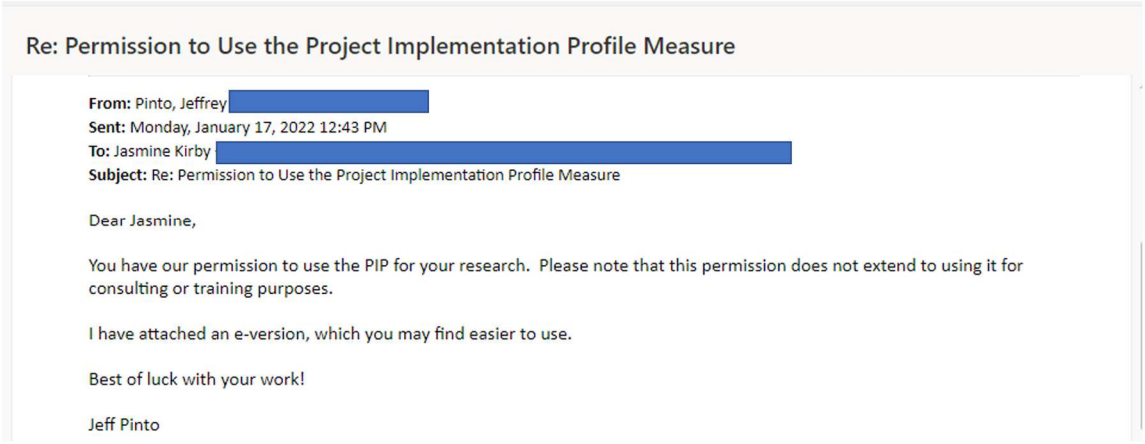
Appendix A: Participant Profile

1. Age
    0. 17 years or younger
    1. 18-29
    2. 30-39
    3. 40-49
    4. 50-59
    5. 60-65
2. Gender
    0. Men
    1. Women
    2. X-Specified
    3. No Reply
3. Project Manager Years of Experience
    1. 2-5 years
    2. 6-10 years
    3. 11-15 years
    4. 15-20 years
    5. Over 20

Appendix B: Permission to Use Project Implementation Profile



Re: Permission to Use the Project Implementation Profile Measure

From: Pinto, Jeffrey [redacted]
Sent: Monday, January 17, 2022 12:43 PM
To: Jasmine Kirby [redacted]
Subject: Re: Permission to Use the Project Implementation Profile Measure

Dear Jasmine,

You have our permission to use the PIP for your research. Please note that this permission does not extend to using it for consulting or training purposes.

I have attached an e-version, which you may find easier to use.

Best of luck with your work!

Jeff Pinto

Appendix C: Permission to Use Table 1 Project Manager Skills

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