The Impact of Authentic Leadership on Resistance to Change in Project Managers

Submitted by

Max Ivan Butler

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctorate of Education

Grand Canyon University

Phoenix, Arizona

March 14, 2019

ProQuest Number: 13811076

ProQuest 13811076

www.manaraa.com

GRAND CANYON UNIVERSITY

The Impact of Authentic Leadership on Resistance to Change in Project Managers

by

Max Ivan Butler

Approved

March 14, 2019

DISSERTATION COMMITTEE:

Ramon-Osvaldo Gonzalez, Ed.D., Dissertation Chair

Roselyn Polk, Ph.D., Committee Member

Erich Randall, Ph.D., Committee Member

ACCEPTED AND SIGNED:

Michael R. Berger, Ed.D.
Dean, College of Doctoral Studies

3/14/19

Date

GRAND CANYON UNIVERSITY

The Impact of Authentic Leadership on Resistance to Change in Project Managers

I verify that my dissertation represents original research, is not falsified or plagiarized, and that I accurately reported, cited, and referenced all sources within this manuscript in strict compliance with APA and Grand Canyon University (GCU) guidelines. I also verify my dissertation complies with the approval(s) granted for this research investigation by GCU Institutional Review Board (IRB).

_____   March 18, 2019_____
Max Ivan Butler   Date

Abstract

The purpose of this quantitative correlational research was to determine what, if any, relationship existed between authentic leadership and resistance to change within a sample of project managers in the United States and whether project management professional (PMP®) certification significantly moderates the relationship between these two constructs. The results showed that authentic leadership does not significantly relate to resistance to change ($p = 0.26$). The study also revealed that the authentic leadership subcomponents of self-awareness, internalized moral perspective, balanced processing, and internalized moral perspective do not relate to resistance to change in project managers ($p = .38$). The overall findings of a moderated multiple regression showed that PMP® certification does not moderate the relationship between authentic leadership and resistance to change ($p = .09$). Model one results of the regression demonstrated that PMP® certification predictor explained 5% of the variance in the resistance to change variable ($F(2,118) = 3.39$, $p = .04$, $R^2 = 0.05$). While the overall ANOVA model was not significant ($p = .09$) the findings relative to PMP® certification underscore the significant impact of formal project methods in project-based environments.

Keywords: authentic leadership, resistance to change, project management, project manager, PMP® certification, self-awareness, internalized moral perspective, balanced processing, self-awareness, change management.

Dedication

This dissertation is dedicated to the memory of my parents, the late Jack C. and Margaret A. Butler. Their early lessons in persistence, determination, and hard work inspired my journey, sustained me through setbacks, and ensured success. My parents taught by example that loyalty to one's aspirations is the substance of character. May their spirit of uncompromising devotion live on through my grandchildren, Levi and Damien, and the generations beyond. May each discover the challenges and rewards of learning through persistence, determination, and self-discipline. May they grow to understand that the impossible is overcome through hammering hard-work steeled in courage, and a steadfast spirit of devotion that will not be denied.

Acknowledgments

I gratefully acknowledge the dissertation committee of Ramon-Osvaldo Gonzalez, Ed.D., Dissertation Chair, Roselyn Polk, Ph.D., Methodologist, and Erich Randall, Ph.D., Content Expert. Your example, dedication to high academic standards, and compassion for the learning experience imparted valuable beyond expression. Thank you for your guidance, professionalism, and exemplary andragogical approach to this learning endeavor. Your work allowed me to learn beyond my ambitions. Thank you.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

The rate of change in today's globalized organizations creates unprecedented resistance to change that leaders must continuously mitigate. Van den Heuvel and Schalk (2015) observed that over the last decade the degree of ongoing globalization drove a significant increase in resistance to change into the workplace. Today's organizational leaders confront the freezing effects of resistance to change on a regular basis (García-Cabrera & García-Barba Hernández, 2014), which creates substantial obstacles to leadership effectiveness. Effective leadership appears critical to organizational success, yet a myriad of change factors can induce resistance to change in organizational leaders. Malik and Masood (2015) observed that resistance to change and positive psychological capital are dueling factors in today's workforce that requires keen leadership acumen. Authentic leadership is a positive psychological approach to organizational leadership (Wang, Sui, Luthans, Wang, & Wu, 2014) that may effectively meet the challenges of today's fast-paced work environment where resistance to change flourishes. In a world of stressful project-based work where time is of the essence, negating resistance to change appears key to leadership effectiveness.

A project-based approach to work activities dominates today's globalized work environment. Pinto (2013, 2014) asserted that organizations now use projects to focus today's work environments on corporate goal achievement. Packendorff, Crevani, Lindgren (2014) recommended that studies should now focus on how common project leadership traits and activities influence social dynamics such as resistance to change. It appears that certain leadership competencies could influence resistance to change.

Research on project leadership influences on resistance to change show continued interest in understanding the relationship between leadership and resistance to change. Lundy and Morin (2013) studied how leadership affects resistance to change. One of the two research questions examined was, "What actions, behaviors, and attitudes of the project manager, if any, can potentially reduce resistance and facilitate change" (Lundy, & Morin, 2013, p. 52). All participants in the study had a minimum of five years of project experience, and the majority were project managers and directors. The researchers concluded that both leadership competencies and formal project management methodology such as those described in the Project Management Institutes (PMI) Guide to the Project Management Body of Knowledge (PMBOK®) reduce resistance to change. The PMI certifies the competence of project managers in formal project management methodology through the PMBOK® based project management professional certification (PMP®). The researchers recommend further studies into various aspects of leadership, formal project methods, and resistance to change in project managers. The compelling gap displayed in the societal context of the extant research gives further impetus to this study.

Bakari, Hunjra, and Niazi (2017) studied authentic leadership and behavioral support for change and found that authentic leadership and the crucial factor of resistance to change deserves further research. Authentic leadership is a mainstream leader model attributed to Luthans and Avolio's (2003) leadership construct. The authentic leadership construct contains four underlying theoretical dimensions of self-awareness, relational transparency, balanced process, and internalized moral perspective. Alavi and Gill (2017) further asserted that authentic leadership positively augments participative leadership,

particularly in change-oriented environments. The research team recommended that future researchers should study authentic leadership for its impacts on change-oriented leadership behaviors. Bakari et al. (2017) concluded that scholars should investigate the importance of authentic leadership in predicting resistance to change. To date, the body of knowledge appeared incomplete relative to conclusive evidence regarding the relationship between authentic leadership and resistance to change.

This quantitative correlational study examined what, if any, relationship exists between the behavior of authentic leadership and resistance to change in PMP® certified and non-PMP® certified project managers and whether PMP® certification may serve as a moderator. Authentic leadership was measured using the Authentic Leadership Questionnaire (ALQ; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008), the Resistance to Change Scale (RCS; Oreg, 2003) measured resistance to change. While there are several organizational leadership components such as the leader, followers, and the organization, this study focused on the leader aspect of authentic leadership in the realm of project management. As Pandya (2014) observed, the project manager as a leader is the architect of organizational success. First, this chapter introduces a brief background, then identifies a critical gap in research, while presenting the essential problem statement.

This chapter provides insight into the problem statement: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. The problem predicates on the observations of several researchers including Bakari, Hunjra, and Niazi (2017) who characterized

resistance to change as a crucial change factor while proposing that future research should investigate the role of authentic leadership in relationship to such a critical factor. Bakari and Hunjra (2017) concluded that authentic leadership positively related to championing change behaviors but were uncertain of the effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem.

In chapter one, the associated research questions and hypothesis preceded an explanation of how this study advanced scientific knowledge. The quantitative methodology and correlational design for the study provided the framework for examining the problem supported by foundational terms, limitations, and delimitations. Chapter two presents a thorough literature review, while chapter three explains the methodology details of the study. To appreciate fully the essence of this research a grounding in the background of the study provides further perspective.

Background of the Study

Resistance to change is a long-standing organizational challenge that leaders must recognize and overcome. The impact of resistance to change has increased in today's competitive market (Dunican & Keaster, 2015). Gondo, Patterson, and Palacios (2013) characterized some organizational failures as a leadership matter that manifests in an inability to manage resistance to change in the globalized environment. Clearly, resistance to change has an increased impact in today's competitive market (Dunican & Keaster, 2015) that calls for enhanced leadership abilities. Alavi and Gill (2017) proposed that authentic leadership has potential to contribute to the effectiveness of organizational change processes, while Wang et al. (2014), observed that Luthans and Avolio's (2003)

model of authentic leadership is a widely-recognized approach to organizational leading. According to Di Fabio, Bernaud, and Loarer (2014), resistance to change generates several behaviors, such as routine seeking, in individuals as well as workgroups. Such resistive behaviors may accelerate a performance decline in the modern work environment leading to individual and organizational failures alike.

Jost (2015) suggested that resistance to change generates from the fact that people highly value belonging to a group. Work relationships appear to create a strong bond that inhibits a willingness to change when extreme uncertainty persists. Per Hardy and Maguire (2016), resistance to change may reinforce current states rather than having a transformative effect. Once values, attitudes, and work patterns establish in an individual, project leader, or a work team, group traditions appear to reinforce the propensity for resistance to change. McCabe (2014) furthered that the imbalance from opposing dyads such as tradition versus unknown change may provoke a resistant psychological state that manifests in certain feelings, attitudes, and behaviors. To facilitate change Jost (2015) advised that a leader must work to unfreeze resistance to change in self and others.

Pointing to the seminal work of Lewin (1947), the unfreezing of attitudes suggests a key leader task in the modern organizational environment of project-based work. The leader task of unfreezing resistance shows insight into leader conduct in the face of change. Leaders who focus on the precise nature of project-based initiatives could inadvertently foster resistance to change in self and others. How a project manager can unfreeze the traditions of a project work culture grounded in standard processes, minimize resistance, and effect change is tantamount to operational success in the project management community.

At the societal level, today's community of project managers must lead projects staffed by transient work teams in a myriad of organizational types. The constancy of change faced by an indirect workforce compels project managers to lead by example. Novo, Landis, and Haley (2017) observed a strong correlation between the behavioral leadership skills of project managers and organizational success and called for additional studies on leadership qualities in project managers. The disposition and actions of a project manager produce a critical influence on the work team. To motivate a team a project manager must develop a positive nature that engenders a cooperative environment. For the society of project managers research has not clarified if the positive traits of authentic leadership ameliorate dispositional resistance to change.

Many project-based organizations seek to enhance organizational efficiency and effectiveness through the Project Management Institute's (PMI) Project Management Professional (PMP®) certification. The institute based the certification on a prescriptive formal project methodology. According to the PMI ("PMI Fact File," 2017), there are 484,524 PMI members in good standing, 761,905 PMP® certified project managers, and another 33,383 managers with a certified associate in project management worldwide. Ramazani and Jergeas (2015) reported that while the expense devoted to certifications and project methods are significant, there is little evidence that the cost translates into practical results. In contrast, Lundy and Morin (2013) identified leadership and formal project management methods as critical elements in overcoming resistance to change.

The paucity of evidence related to authentic leadership and resistance to change presents a significant problem at the individual and organizational level. Bakari et al. (2017) characterized resistance to change as a crucial change factor concluding that

future research should investigate the role of authentic leadership in the development of change related behaviors that reduce resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem.

Problem Statement

It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Given that change is a persistent process in organization's today, Nixon (2014) explained that mitigating resistance is a continuous leadership task. Finding the optimum leadership approach requires examination of new leadership constructs. Fusco et al. (2016) observed that authentic leadership is a new leadership construct in the emergent stages of development. As the authentic leadership model develops, studies on its relationship to resistance to change may further the body knowledge. Other researchers such as Bradutanu (2014) examined the influence of leadership style on resistance to change in organizational leaders showing that a participative leadership style ameliorates resistance to change. The research of Alavi and Gill (2017) further asserted that authentic leadership positively augments participative leadership, particularly in change-oriented environments.

Leadership is now more critical than ever given the prevalence of dispositional resistance to change invoked in the project-based environments of modern organizations. Chronéer and Backlund (2015) characterized many modern companies as project-based

organizations. In such environments, organizations produce services and goods through project work led by project managers. Koskinen (2012) reported that to achieve competitive success a project approach to work life is increasingly important. Lines, Sullivan, Smithwick, and Mischung (2015) observed that resistance to change often foiled project work and called for specialized change agents to lead projects. The emergent research shows a need to understand better the leadership behaviors that contribute to success in project-based organizations where resistance to change persists.

Many organizations require project managers to develop a formal project methodology through professional project management certifications such as the Project Management Institute's (PMI) Project Management Professional (PMP®) certification. The certification relies on a procedural formulary to managing projects. According to Lundqvist and Marcusson (2014), it is vital that project managers lead projects according to the connected and coherent activities that the PMP® certification fosters.

Those people charged with project leadership, spend their work life at the epicenter of organizational success. Lundy and Morin (2013) found that project leadership and formal project methodology has substantial practical results on resistance to change and ultimately project outcomes. As evidence of the importance of the project management professional, the U. S. Government recently passed the Program Management Improvement and Accountability Act ("Program Management," 2015) to enhance project management operations across U.S. governmental agencies. Yet, as population, researchers know little about how authentic leadership relates to reducing resistance to change in project managers.

A project leader's ability to reduce resistance may hinge upon traits such as self-awareness, relational transparency, balanced processing, and internalized moral perspective. As evidenced by the research team of Lundy and Morin (2013) an engaging leadership style and inclusiveness, which parallels authentic leader traits reduce resistance to change. How authentic leadership traits relate to resistance to change appears important to operationalize projects effectively in organizations. According to Datta (2015), authentic leadership contributes to leader effectiveness by enhancing readiness for change. How authentic leadership contributes to the effectiveness of project managers in the United States

The unit of analysis for this study was individual project managers in the United States. According to Maqbool, Sudong, Manzoor, and Rashid (2017), the human dispositions of individual project managers are critical to transformative work. Key to any project success is the disposition of the individual project manager. As Bailey and Raelin (2015) observed, organizations do not resist change people do. For these reasons, the individual project manager is the central unit of analysis in the examination of the relationship between authentic leadership and resistance to change.

This study aimed to address to what extent, if any, a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Bakari et al. (2017) characterized resistance to change as a crucial change factor concluding that future research should investigate the role of authentic leadership in the development of change related behaviors that reduce resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but

were uncertain of the effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. In discovering the relational nature of authentic leadership and resistance to change, future leaders may overcome the challenges of confusion, delay, and inefficiencies generated from high states of resistance to change.

Research Questions and Hypotheses

This research examined if a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. The predictor variables in this study included authentic leadership and its multidimensional model comprised of leader self-awareness, relational transparency, internalized moral perspective, and balanced processing, as measured by the ALQ (Walumbwa et al., 2008). The criterion variable in this study was resistance to change, a tendency or reaction to avoid, suppress, and devalue the positive possibilities of change. The moderating variable in this study was PMP® certification, a professional certification of project managers offered through the PMI, which the institution tests and measures against the published Project Management Body of Knowledge. The conceptual and operational definitions of each variable, as well as the unit of measure further support the research questions and hypothesis.

Walumbwa et al. (2008) provided a conceptual definition of authentic leadership as a higher order construct of ethical leadership that is composed of four factors that include self-awareness, relational transparency, internalized moral perspective, and balanced processing. Datta (2015) observed that researchers frequently measure authentic

leadership using the ALQ, which Walumbwa et al. (2008) operationalized and validated. Oreg (2003) conceptually defined resistance to change as a higher order resistive disposition characterized by the four factors of routine seeking, emotional reaction to imposed change, short-term focus, and cognitive rigidity. Oreg (2003) produced a means to operationalize resistance through the RCS scale. The moderating variable of PMP® certification may be conceptually defined as a tested professional credential of a formal project methodology that is based upon the PMI Project Management Body of Knowledge ("PMBOK®," 2017). For this study, PMP® certification was operationalized using a yes or no interval survey question.

The first research question addresses the first clause of the problem statement, which is that it was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers. The first question examines the higher order construct of authentic leadership in relation to resistance to change. The second research question further supports the problem statement. The second question called for a discrete examination of the four theoretical dimensions of authentic leadership in relation to resistance to change. The third research question provided a practical organizational dimension to the investigation in support of the second clause of the problem statement. Together the questions seek to address the stated problem thoroughly: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator.

The following research questions and hypothesis guided this quantitative work:

Predictor Variable 1: Authentic leadership – interval

Predictor Variable 2: Self-awareness – interval

Predictor Variable 3: Relational transparency – interval

Predictor Variable 4: Internalized moral perspective – interval

Predictor Variable 5: Balanced processing – interval

Moderator Variable: PMP® certification - dichotomous

Criterion Variable: Resistance to change - interval

RQ1. To what extent, if any, does authentic leadership predict resistance to change?

H_{01}: There is no statistically significant relationship between authentic leadership and resistance to change.

H_{1a}: There is a statistically significant negative relationship between authentic leadership and resistance to change.

RQ2: Do each of the four authentic leadership components significantly predict resistance to change?

H_{02}: There is no statistically significant relationship between self-awareness and resistance to change.

H_{2a}: There is a statistically significant negative relationship between self-awareness and resistance to change.

H_{03}: There is no statistically significant relationship between relational transparency and resistance to change.

H_{3a}: There is a statistically significant negative relationship between relational transparency and resistance to change.

H_{04}: There is no statistically significant relationship between internalize moral

perspective and resistance to change.

H_{4a}: There is a statistically significant negative relationship between internalized

moral perspective and resistance to change.

H_{05}: There is no statistically significant relationship between balanced processing

and resistance to change.

H_{5a}: There is a statistically significant negative relationship between balanced

processing and resistance to change.

RQ3: To what extent, if any, does PMP® certification serve as a moderator for

authentic leadership and resistance to change?

H_{06}: PMP® certification does not serve as a statistically significant moderator for

authentic leadership and resistance to change.

H_{6a}: PMP® certification serves as a statistically significant moderator for

authentic leadership and resistance to change.

Purpose of the Study

The purpose of this quantitative correlational research was to determine what, if

any, relationship exists between authentic leadership and resistance to change within a

sample of project managers in the United States and whether PMP® certification

significantly moderates the relationship between these two constructs. It appears that

human beings consistently show a propensity for custom and tradition over progressive

change (Jost, 2015). Over time, a legacy of researchers (Kotter, 2012; Lewin, 1951)

recognized resistance as a critical barrier to change. As described in the benchmark work

of Coch and French (1948), resistance to change includes a combination of individual

reactions to frustration coupled with strong group identity. Based on a study of project leadership influences on resistance to change Lundy and Morin (2013) surmised that positive, ethical, and participative project leadership ameliorates resistance to change.

Authentic leadership is a measurable form of ethical leadership that leads to effective management and leadership performance. Datta (2015) demonstrated the use of the ALQ as a reliable measure of authentic leadership. In this study, authentic leadership and the four underlying theoretical dimensions of self-awareness, relational transparency, internalized moral perspective, and balanced processing as measured by the ALQ served as predictor variables. How authentic leadership relates to resistance to change forms the fundamental framework of the research. Oreg's (2003) seminal work characterized resistance to change as an individual's tendency to resist, avoid, and devalue change, which the RCS effectively measures. Resistance to change as measured by the RCS functioned as this study's criterion variable. Additionally, this research employed PMP® certification as a moderating variable. The examination aimed to identify if PMP® certification moderates the relationship between authentic leadership and resistance to change in project managers.

Lawrence, Ruppel, and Tworoger (2014) described the innate gravity of the security of tradition that creates emotions during a change, which a leader must recognize and address. As Sushil (2013) underscored, in the accelerated world of globalized commerce, changes occur continuously. The PMI institute ("PMBOK®," 2017) advocates that to manage effectively, project managers must use a triad of talents that include formal project management methods, strategy and business management, and leadership.

Yet research shows little about effective leadership behaviors organizational leaders may use to address the disposition of resistance to change.

Project leadership acumen is now more critical than ever to organizational success, so much so that many organizations require project managers to acquire professional project management certifications such as the Project Management Institute's (PMI) Project Management Professional (PMP®) certification. Lundy and Morin (2013) found that an engaging leadership style and formal project management methodology effectively reduce resistance to change. Analogously, authentic leadership is as an engaging leadership style, and PMP® certification verifies that project managers possess sound formal project management acumen. According to Lundqvist and Marcusson (2014), it is vital that project managers lead projects according to the kind connected and coherent activities that the PMP® certification fosters. Alarmingly Ramazani and Jergeas (2015) reported that while the expense devoted to certifications and project methods are significant, there is little evidence that the cost translates into practical results. This research employed PMP® certification as a dichotomous variable to examine if the certification moderates the relationship between authentic leadership and resistance to change in the study population.

From hospitals and educational institutions to high technology and construction industries, project managers lead work activities in the modern workplace. According to the Project Management Institute ("PMI's," 2017), change creates new projects, which increases the need for highly skilled project leaders. Often project managers are former individual contributors experienced in the work domain, who transition into leadership roles to manage projects with clearly defined beginnings and ends. Given the temporal

nature of project work, project practitioners regularly lead through changing work assignments, staffs, and priorities. The population of project managers in today's work environment typically possess experience in a specialized domain, such as engineering, nursing, education, or business before ascending to a project management role. This study sought to advance scientific knowledge on what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification significantly moderates the relationship between these two constructs.

Advancing Scientific Knowledge and Significance of the Study

 Advancing scientific knowledge. The primary theoretical components of authentic leadership include (a) the leader, (b), the leader process of influence on the follower (employee), (c) the follower, and (d) the organization. This study focused on the leader aspect of authentic leadership and utilized Meyer and Allen's (1991) seminal organizational commitment theory (OCT) as a guiding construct. Meyer and Allen (1991) observed that behavior shapes affective attitudes, which may prove crucial to project managers who regularly experience the psychological state of resistance to change. Authentic leadership is integral to organizational commitment as demonstrated by Walumbwa et al. (2008), who noted that authentic leaders tend to exhibit elevated levels of organizational commitment and are skilled in promoting commitment among their employees (Öztekin, İşçi, & Karadağ, 2015; Rego, Lopes, & Nascimento, 2016). Per OCT (Meyer & Allen, 1991), this study examined if the behavior of authentic leadership significantly influences the disposition of resistance to change.

Over time a legacy of researchers identified resistance to change as a critical organizational challenge. Lewin (1951), Schein (1996), and Kotter (2012) recognized resistance to change as a critical barrier to organizational effectiveness. Each formulated a seminal framework to address the challenge of resistance to change. Kotter (2007, 2012) observed that organizational paralysis could generate from having too many managers and not enough leadership. This insight into leadership as an effective means to address the corrosive effects of resistance to change gives impetus to this study. Comparably, Lines et al. (2015) observed that project management efforts suffer from a lack of focus on the effects of resistance to change. It appears that as the paralyzing effects of resistance to change increases workforce productivity declines, which compels leadership reactions. The realization of a gap between leadership constructs and resistance to change now drive a review of seminal concepts given the significance of leadership in modern organizations.

This study continued scientific knowledge by addressing a knowledge gap. Extending the research recommendation of Bakari and Hunjra (2017) this study explicitly measured the relationship between authentic leadership and resistance to change. Bakari et al. (2017) concluded that future research should investigate the role of authentic leadership in relation to change related behaviors such as resistance to change. In accordance with OCT (Meyer & Allen, 1991) this study also questioned whether the condition of PMP® certification significantly moderates the relationship between these two constructs.
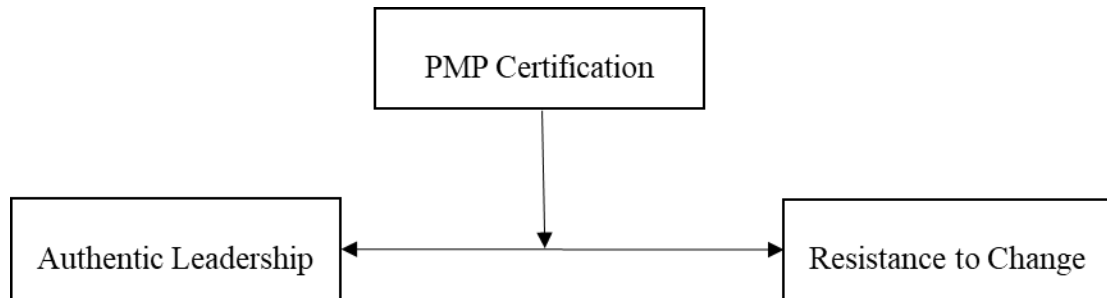
Figure 1. OTC applied to authentic leadership, PMP® certification, and resistance to change.

This research contributed to the understanding of authentic leadership within OCT (Meyer & Allen, 1991) by examining authentic leadership, a higher order construct, comprised of behaviors such as self-awareness, relational transparency, balanced processing, and internalized moral perspective in relation to resistance to change. This study also contributed to the growth of research in leading projects in an environment of persistent change where the state of resistance to change flourishes. How milestone dependent project managers can break down the obstacles of resistance in a practical way using open behaviors of authenticity may present an opportunity to contribute to the body of knowledge in the domain of current project leadership.

The significance of the study. Penava and Šehic (2014) described project managers who lead projects as change agents, yet many change initiatives fail because of an inadequate leadership style. This study quantitatively demonstrated if a relationship exists between authentic leadership behaviors and the disposition of resistance to change. This study examined whether PMP® certification significantly moderates the relationship between these two constructs. There appears a paucity of research evidence that certified project managers overcome resistance to change any more successful than non-certified project managers. External pressures, the complexity of change in today's environment, and efficiency compels project managers to address change in new ways. Authentic

leadership could present breakthrough potential over the psychological effects of resistance to change.

The significance of this study centered on the organizational necessity to overcome resistance to change. Lozano (2013) concluded that overcoming resistance to change in today's globalized environment may make the difference between organizational success and failure while recommending leadership to address resistance to change. The evidence found in the body knowledge shows authentic leadership as a foundational leader model (Wang et al., 2014), while resistance to change is a prevailing obstacle (Jost, 2015). The elements of authentic leadership, and resistance to change show potential for new insights into the leadership domain.

Based on extant research, linking the effects of authentic leadership behavior to resistance to change in project managers appears a needed advancement. Wang et al. (2014) described the authentic leadership model as a recognized positive approach to organizational leading, while Lloyd-Walker and Walker (2011) recommended studies on the relationships between authentic leadership and managing projects. Bakari et al. (2017) further described resistance to change as an "important factor" (p. 175), concluding that future research should investigate the role of authentic leadership in the development of change related behaviors.

Knowing if relationships exist between authentic leadership and resistance to change could provide practical value in project management activities. Anca (2013) asserted that project managers must implement change in organizations. The findings of how authentic leadership competencies and resistance to change could practically affect how organizations train and equip project managers to accept and implement change. It is

impractical for organizations and individual project managers alike to invest time and money in professional leadership development and certifications without reliable outcomes.

The Project Management Institute's 2016 pulse of the profession report stated that when organizations focus on project management methods, leadership, and strategic management expertise, as much as 40 percent more projects meet their goals. The Project Management Institute ("Project Management Professional," 2019) reported that the Project Management Professional certification is the most important credential for project managers today. Ahsan, Ho, and Khan (2013) furthered that as of the year 2010 the PMI had over 3.3 million members, of which over 400,000 were PMP® credential holders. Since that time, the number of PMP® credential holders have grown to nearly 762,000 project managers. To achieve the certification individuals must pass a rigorous credentialing examination. While formal project management methods proved instrumental in reducing resistance to change qualitatively (Lundy, & Morin, 2013), this study seeks to measure the moderating effects, if any, of a professional certification in the PMI's formal project management methodology.

Further understanding of how leadership behaviors manifest in the project management community, many who are PMP® certified, may provide insight into the utility of authentic leadership to overcome resistance to change quickly. Due to the fast pace of project work in an uncertain globalized environment, understanding variables that affect resistance to change is central to leading authentically.

The results of this study could have far-reaching practical effects upon future leader strategies as well as practical project management skills and knowledge that may

overcome resistance to change, especially regarding the employment of authentic leadership. The use of authentic leadership might overcome resistive states, such as routine seeking, which may provide new means of developing effective project managers. Among the desired results of this research is to identify the significant leadership variables project managers can develop or acquire to minimize resistance to change. For these practical and potentially revealing reasons, the significance of determining whether authentic leadership behaviors relate to resistance to change in fast-paced project environments is great.

Rationale for Methodology

This research used a quantitative methodology in a non-experimental fashion. As described by Delost and Nadder (2014) quantitative methodology facilitates a deductive approach that tests concepts, variables, and hypotheses. For this study, the researcher used an objective approach free from interventions. The work sought to discover empirical observations and patterns in variables that may show relationships. Qualtrics LLC collected the source data for this research from a national population of project managers.

The purpose of this study was to establish if and to what extent, if any, a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Research experts such as Denscombe (2009) and Neuman (2011) further validated that quantitative methodology is a deductive means to test variables and hypotheses. The essence of this study examined variables and hypotheses objectively without manipulation or modification. To the end of demonstrating relationships through

the measurement of variables, the quantitative methodology showed utility consistent with similar research and the underlying intent of this study.

The body of knowledge related to authentic leadership shows several quantitative benchmarks. Peus, Wesche, Streicher, Braun, and Frey (2012) used quantitative methods to conduct an empirical test of authentic leadership antecedents, consequences, and mediating mechanisms. Wang et al. (2014) similarly used quantitative processes to study the impact of authentic leadership. Additionally, the use of quantitative methods allowed the full use of measurement instruments such as the ALQ and the RCS. In both cases, the instrument authors designed and validated the measurement instruments for quantitative research, not for qualitative evaluations.

According to Wener, and Woodgate (2013), qualitative studies are primarily descriptive in nature. The qualitative approach would not measure the strength of the relationship, if any, between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Given that the central aim of this research is to examine variables and hypotheses deductively over a descriptive treatment, the quantitative methodology appears the most effective means to address the research questions herein.

Nature of the Research Design for the Study

This study used a correlational design to determine if there is a relationship between variables. As such the study employed a quantitative methodology while using a correlational research design to evaluate interval variables. According to Puth, Neuhäuser, and Ruxton (2015), correlation designs test relationships among interval variables. Only non-experimental designs were considered for this study because the

experimental treatment effects of groups are not central to the research. Given that a causal-comparative design determines the causes of differences rather than establishing the relationships between variables, the correlation design appeared the best fit given the relational nature of the study. As summarized by Zachariadis, Scott, and Barrett (2013), the focus of a correlational study is to measure bivariate variables to discover relationships.

A correlational study examines if there is a relationship, or a covariation, between variables. In this case, linear regression was used to demonstrate if there is a significant relationship between authentic leadership and resistance to change. Positive and negative statistical relationships may occur between variables. The results of the linear regression were expected to show a negative relationship between authentic leadership and resistance to change. A negative relationship would demonstrate that as the authentic leadership scores increased the state of resistance to change decreased.

This study showed the ability of authentic leadership to predict resistance to change. The correlative design established if and to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification serves as a moderator. According to the seminal work of Baron and Kenny (1986), a moderator is a variable that affects the direction and strength of the relationship between predictor and criterion variables. The use of a correlational design shows the best means to understand the relationships between the variables. Comparably, other researchers employed correlational designs for similar studies.

The design patterns in antecedent research showed correlative design use when studying authentic leadership and resistance to change. Wang et al. (2014) studied the impact of authentic leadership on performance using a correlative design to study the variables of positive, authentic leadership psychology and leader-member exchange (LMX). The resulting high correlation between LMX and authentic leadership exemplified the utility of the design. Additionally, Bakari et al. (2017) studied how authentic leadership influenced planned organizational change using a correlative design. Comparably, Malik and Masood (2015) studied the bivariate dyads of emotional intelligence and resistance using a similar correlation design with a population of Pakistani professionals working in the telecom industry.

A national sample of project managers in the USA presented the preferred population base for this study. This study required a minimum sample size of N = 85. A power analysis addressed linear regression, multiple linear regression as well as moderated multiple regression. Moderated multiple regression ("Laerd Statistics," 2013) determines whether the relationship between two variables depends upon, or is moderated by, the value of a third dichotomous variable. The total number of tested predictors for RQ1 = 1. The total number of tested predictors for RQ2 = 4. The total number of tested predictors for RQ3 = 3. The significance was set at $p < .05$ and power was set at .80. The effect size was medium, $f2 = .15$. Results from the power analysis indicated that this study required a minimum a sample size of N = 85 for the linear multiple regression examinations.

The instruments in this survey generated quantitative data for analysis. First, the ALQ provided feedback on the four key leadership traits of self-awareness, relational

transparency, balanced processing, and internalized moral perspective (Walumbwa et al., 2008). Researchers may request use permission of the ALQ, without charge, for non-commercial purposes (Walumbwa et al., 2008) at www.mindgarden.com. Second, Oreg and Sverdlik (2011) observed that the RCS assesses dispositional change aversion. The RCS facilitated the examination of the resistance to change criterion variable. The RCS when used for non-commercial research and educational purposes does not require written permission (Oreg, 2003). Both survey instruments consist of standard questions with Likert scale responses.

Qualtrics LLC, a private research software company based in Provo, Utah, administered the data collection procedures. Qualtrics LLC survey administrators presented the surveys to participants using internet technology. The survey organization administered two separate survey instruments simultaneously, one after the other. The survey administrator delivered the instruments without modifications. Potential participants in the survey received a description of the survey purpose and a consent statement before entering the survey question page. A mouse-click on the term "accept" demonstrated participant acceptance of the consent statement and a willingness to engage in the survey. Confidentiality statements reinforced the integrity of the study while assuring participants through informed consent.

The participants first received the seven demographic questions, then the 16 question Authentic Leadership Questionnaire followed, finally the 17 question Resistance to Change Scale concluded the survey. Qualtrics LLC ordered participant data in a list as the demographic data did not contain participant names. The isolation between the data collection process and the researcher safeguard's participant anonymity. Qualtrics LLC

provided the data to the researcher in a spreadsheet format (.cvs). The researcher stored the sample from the individual project managers on an isolated, password protected hard-drive with encryption.

The unit of observation for the research questions was the individual project managers who took the survey. While qualifications vary, according to Maqbool et al. (2017), the human dispositions of individual project managers are critical to transformative work. The second research question focused on the elements of the four-factor authentic leadership construct using observations from individual project managers in the USA. The third research question focused on the moderating effects of PMP® certification. The third question observed equal numbers of certified and non-certified project managers to discover any moderating effects between the two constructs.

Definition of Terms

This research centered on the concepts of authentic leadership traits and resistance to change. Defining terms clarified the variables, data analysis, and meaning of the results. The following definitions provide an orientation to the study terminology.

Authentic leadership. According to Wang et al. (2014), authentic leadership is a "positive, genuine, transparent, ethical form of leadership" (p. 5.) The traits of authentic leadership include self-awareness, transparency, ethics, and balanced processing. Tonkin (2013), furthered that authentic leadership relies on leader traits to build positive psychological capital in self and others through inclusiveness.

The other's view is a crucial attribute to leading authentically. Srivastava and Jaiswal (2015) observed that authentic leadership's focus on the development of others

while creating an optimistic environment. The inclusive relational commitment of the leader to team members is a central tenant of authentic leadership.

   Balanced processing. According to Alavi and Gill (2017), the ability to consider diverse perspectives, free of personal bias, in the process of decision making depends upon balanced processing. Leaders in the fast-paced change environment of the globalized economy must make sound and timely decisions. According to Welsh and Ordonez (2014), subconscious processes can influence decision making no matter the leader perspective or sense of timing. Given this innate bias tendency, balanced processing appears critical to a fair and fast consideration of diverse perspectives.

   Internalized moral perspective. Meng, Cheng, and Guo (2016) described internalized moral perspective as the leader trait that produces decisions based on objectively high ethical standards, rather than more subjective self-serving behaviors. This self-less perspective appears to parallel the trait of self-awareness. Those leaders who approach decisions using internalized moral perspective must develop self-discipline using high ethical standards. Datta (2015) explained that self-regulation, which is characteristic of internalized moral perspective, depends upon internal moral standards and values over external pressures. It is the sense internalized moral perspective, expressed as high moral values, which authentic leaders seek to express in decisions and behaviors.

   PMP® certification. The PMP® certification is a tested process of a formal project management methodology produced by the Project Management Institute (PMI). The PMI based the PMP® certification upon the Project Management Body of Knowledge ("PMBOK®," 2017). A certification candidate must pass a 200-question exam and meet

stringent professional requirements to receive the PMP® certification award. The comprehensive test covers the phase-based domains and methods of project management including initiating the project, planning the project, executing the project, monitoring and controlling the project, closing the project, as well as the PMI professional ethics code.

Project manager. According to Penava and Šehic (2014), project managers are change agents who lead project work. Project work is a prescriptive approach, using formal project management methodologies, to projects with a clearly defined beginning and end. Project Managers employ both leadership and management techniques to meet schedule and cost constraints while producing goods and services against clear definitions. Anca (2014) furthered that a project manager's work in environments of frequent changes that require fast and positive leader actions to exploit opportunities and to protect from threats.

Relational transparency. Datta (2015) asserted that relational transparency refers to how a person shows their authentic self over an artificial or distorted self, to others. The act of disclosure appears a critical element of openly sharing through relational transparency. Maximizing the expression of honest thoughts and feelings while minimizing inappropriate emotions, defensive reactions, and withdrawal also characterize relational transparency.

Resistance to change. Resistance to change generates from the frozen attitudes formed by tradition and repetition (Jost, 2015). Stemming from the safety, security, and stability of knowns, resistance to change defends against leaving the status quo. The

pressures of ambiguity and unknowns create a force of resistant attitudes and behaviors towards change which often results in behaviors such as routine seeking.

Routine seeking. Michel, Todnem By, and Burnes (2013) cited four reliable factors related to resistance to change including, routine seeking. The tendency to seek routines appears a means to find safety, security, and stability when confronted with too many unknowns. Oreg and Sverdlik (2011) fully described routine seeking as the degree that an individual enjoys stable and routine environments.

Self-awareness. Srivastava and Jaiswal (2015) described the extent to which a person is aware, or has knowledge of, personal values and thoughts as self-awareness. Keen efficacy of personal strengths and limitations characterizes an individual with self-awareness. A clear view of how others view self, from an extrinsic perspective, gives substance to self-awareness. Opatokun, Hasim, and Syed Hassan (2013) furthered that self-awareness is the measure of a person's consciousness of self-components congruent with how others perceive them.

Assumptions, Limitations, Delimitations

This study included assumptions, limitations, and delimitations, which are accepted conditions of the research.

Assumptions. Research assumptions are those criteria that are taken as true for this study. The assumptions in this study included:

1. It was assumed that project managers may choose to learn and use authentic leadership traits in the workplace.

2. It was assumed that project managers encounter the organizational obstacle of resistance to change. Those project leaders who participate in this study were experienced with leading projects, facing obstacles, and overcoming resistance to change.

3. It was assumed that those answering the survey responded honestly and deception-free. While this assumption may be common in social science research, there is significant pressure on project managers to perform. Some could find the corporate pressure to perform in conflict with honest answers relative to leading in an open and sharing way. Leaders who work in more bureaucratic and hierarchal organizations may withhold from candid responses. Qualtrics LLC administered the survey in an anonymous way that provided privacy assurances to the participants. Given the safeguards, it was reasonable to assume the responses were honest.

4. It was assumed that the survey was administered consistently across the population. The survey was administered using Qualtrics LLC survey services. This survey service provided a consistent administration across the population. The researcher did not administer the survey, so assurance of consistency was indirect. This assumption may not be critical, given the experience, and reputation Qualtrics LLC survey services have with administering research surveys.

5. It was assumed that the identified instruments are valid. The ALQ and the RCS show a history of use and reliability in social science research. These instruments, when properly administered, provided measures that many researchers have used reliably over time.

Limitations. Limitations are items that a researcher cannot control. In this case,

the number of project managers within the U.S.A. constrains the research. To mitigate

this limitation both PMP® certified and non-certified project managers participated in the

study. The following additional limitations were present in the study:

1. The research collected self-reported information, which could be inaccurate. The measurement instruments while valid, may not reflect the perspective of the participants due to biases and other reasons. According to Weigold, Weigold, and Russell (2013), self-report services using proven instruments appear acceptable when viewed through the lens of comparative benchmarks in research projects.

2. The internal validity due to the research design limits this study. According to Puth et al. (2015), a correlational design does not determine causation of a relationship between the variables. The results of this study will be limited to if a relationship exists between the variables.

3. The survey conducted through Qualtrics LLC online services limits the direct assurance of a representative population of project managers. Given Qualtrics LLC record as a trusted agent of survey panels, this limitation was contained through statements of assurance from Qualtrics LLC.

4. Time and cost constraints limit this survey activity from a more robust or selective population. Dillman (2014) observed that online surveys presently provide the best potential for collecting data for little cost.

Delimitations. Delimitations are those areas where the research has control. The population of project managers in the Southwest U.S.A., or in available, select organizations, were not large enough to constitute a valid study. To mitigate this restriction the population scope expanded to project managers across the U.S.A. This broader scope may also contribute to increased generalizability of the population. Beyond this scope adjustment the results the following delimits are present in the proposal:

1. The survey of project managers was demographically delimited to project managers in the U.S.A. By controlling the scope of the demographic sample to the U.S.A., the study was manageable within the constraints of the project definition. Future studies may have an opportunity to compare this work as a benchmark with populations in other regions. Given the time and financial constraints, this delimitation creates a realistic population for the project.

2. The study was delimited to three questions as they relate what extent, if any, a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator.

3. While other certification credentials are available to project managers, this study examined only the moderating effects of PMP® certification. Given the nature of the study, this delimitation created a realistic demonstration of research capabilities without excessive complexity.

Summary and Organization of the Remainder of the Study

The challenges of overcoming resistance to change using authentic leadership behaviors propel this study. As Jones and Van de Ven (2016) observed engaging and supportive leadership behaviors mitigate resistance to change. Bakari et al. (2017) furthered that future research should investigate the role of authentic leadership in the development of change related behaviors such as resistance to change. The natural tendency to gravitate to the routines of tradition and group culture during the uncertainty

of change presents significant leadership challenges. Those behaviors, such as authentic leadership that could mitigate resistance to change may prove critical to future organizational operations. As the rate of change and organizational complexity accelerates, the organizational need to mitigate resistance to change through leadership increases, more so than a need for change procedures.

Prior research on resistance to change centered on the seminal work of Lewin (1947) that focused on procedural change steps. To date, there has been limited research on the relationship between authentic leadership and resistance to change within project managers. Bakari et al. (2017) recommended further research into the role of authentic leadership in the development of change related behaviors. Equivalently, how the inclusive relational nature of authentic leadership might overcome resistance to change shows potential as an effective dispositional management means. This quantitative study using a correlation design examined to what extent, if any, a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator.

Chapter two contains a review of literature related to authentic leading and resistance to change. Topics covered included the framework of authentic leadership including self-awareness, relational transparency, balanced process, and internalized moral perspective. Additionally, the research examined resistance to change, change management, and leading projects. The chapter includes considerations from a theoretical perspective as well as objective research evidence in each area. Chapter three robustly presents the methodology, describing the survey instruments, how Qualtrics LLC administered the instruments, data collection, and analysis. Chapter four describes the

results of the analysis thoroughly, while chapter five presents conclusions, implications, and recommendations.

Chapter 2: Literature Review

Introduction to the Chapter and Background to the Problem

Leading change is crucial to effective operations, which project managers in globalized organizations lead. In today's fast-paced organizations a cadence of deadlines, milestones, and deliverables continuous change drives a non-stop reality. Mariana, Daniela, and Nadina (2013) asserted that individuals resist changes in nearly any process, fast or slow. Resistance to change as an obstacle to success appears to increase with the rate of change. Those project managers that fail to continuously accept and effectively address resistance to change in self and others may fail entirely. To operationalize change management techniques that overcome resistance to change is vital to organizational operations.

Organizations today depend on project management as a mechanism to institute change. Lines et al. (2015) observed that projects are temporary organizations that must be viewed from a change management perspective. The use of project management in change-intensive environments places project managers in the role of change agents. Understanding the positive effects of leadership relative to change seems paramount to the agency of change. Authentic leadership builds upon the theoretical foundation of positive psychology, as Luthans and Avolio's (2003) described. Positive psychology may contribute to leading change as well as overcoming the challenge of resistance to change. How such leadership behaviors could relate to overcoming the state of resistance to change in project managers provided a context for this study.

The study focused on the leader aspect of authentic leadership and utilized Meyer and Allen's (1991) seminal organizational commitment theory (OCT) as a guiding

theory. Meyer and Allen (1991) observed that behavior shapes affective attitudes, which may prove crucial to project managers who regularly experience the psychological state of resistance to change. Rego et al. (2016) described the critical nature of the leader's role in fostering organizational commitment through authentic leadership behaviors. How a project manager may use authentic leadership to overcome a sense of resistance to change may have far-reaching impact beyond self to commitment throughout an organization, and ultimately success. Meyer and Allen (1991) further demonstrated how organizational effectiveness depends on more than a stable workforce with fixed roles.

Going beyond role requirements and traditional work patterns, breaching obstacles calls for a positive attitude of commitment that starts with organizational leaders like project managers. As Krog and Governder (2015) observed project managers should exhibit altruistic behaviors to stimulate commitment and trust. Those project managers who can positively accept, identify with and implement change, with little resistance, likely engage in the kind of altruistic interactions that lead and facilitate transformative objectives in today's project-based organizations.

According to Packendorff et al. (2014), others should study leadership concerning process and social interactions to understand the dynamics between project managers and change. The authentic leadership behaviors of self-awareness, relational transparency, balanced processing, and internalized moral perspective as presented by Wang et al. (2014) appear social in nature. Such behaviors influence organizational thinking regarding openness to change and the development of innovative ideas. To institute change project managers must accept and socialize innovative ideas that may first challenge the zone of comfort internally then challenge again externally.

Jost (2015) observed that to change is to leave the comfort of the present social reality. Present norms appear to create resistance to change manifest in behaviors such as routine seeking, which further fixes attitudes and behaviors in the face of uncertainty. Resistance to change often emerges as a responsive psychological force that pushes away from the uncertainties of a new idea and towards cultural routines. According to Di Fabio et al. (2014), routine seeking is a predictable reaction to the uncertainties of change. Today's project managers must overcome the routine seeking tendencies of resistance to change at an unprecedented rate. How the leadership competencies of authentic leadership might relate to resistance to change presents opportunity for further study.

The purpose of this quantitative correlational research is to determine what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification significantly moderates the relationship between these two constructs. It appears that human beings consistently show a propensity for custom and tradition over progressive change (Jost, 2015). Over time, a legacy of researchers (Kotter, 2012; Lewin, 1951) recognized resistance as a critical barrier to change. As described in the benchmark work of Coch and French (1948), resistance to change includes a combination of individual reactions to frustration coupled with strong group identity. Lundy and Morin (2013) suggested project leadership may influence resistance to change. Researchers have yet to discover how authentic leadership may influence resistance to change.

Qualtrics LLC surveyed the participating project managers using the ALQ and the RCS in a national sample of project managers. The resulting scores from the sample characterized the relationship between authentic leadership behaviors and the state of

resistance to change. The PMI institute ("PMBOK®," 2017) advocates that to manage effectively projects today project managers must use a triad of talents that include technical project management demonstrated through formal project management methodology, strategy and business management, and leadership. Yet research shows little about effective leadership traits project managers may use to address resistance to change.

Chapter organization. This study sought to understand if a relationship exists between authentic leadership behaviors and the psychological state of resistance to change in project managers. This literature review examines the predictor variables including authentic leadership and its four factors of self-awareness, internalized moral perspective, relational transparency, and balanced processing, as well as the criterion variable of resistance to change. This research explores further the observation that formal project management methods are instrumental in reducing resistance to change (Lundy, & Morin, 2013) through a moderating variable. The review examines the major themes of resistance to change, change management, the four factors of the authentic leadership model as well as project management principles and PMP® certification.

Lewin's (1947) characterization of resistance to change as a freezing force ground the first theme of this study. Resistance to change is an individual's opposing reaction to a proposed organizational change. The leader's work when challenged by the oppositional forces of change is to unfreeze attitudes and behaviors in self and others about the traditional status quo. This theme also examines the fitness of Oreg's (2003) Resistance to Change Scale as a valid quantitative survey instrument to measure resistance to change characteristics. The second theme seeks to describe leader strategies

to manage effectively change. Lewin's (1947) change construct of unfreezing, moving, and refreezing addresses resistance to change through the unfreezing phase. Kotter's (2012) eight-step change management model expands upon the need to address resistance to change. This thematic review led to authentic leadership traits and the project management constructs.

The theme of authentic leadership behaviors provided fulsome details concerning the leader style regarding self-awareness, relational transparency, balanced processing, and internalized moral perspective. As described by Wang et al. (2014) authentic leadership contributes to positive psychological factors. Finally, the theme of project management as it relates to leading and change showed an essential context for facing the challenge of resistance to change in today's project-based environments. Lundy and Morin (2013) recommended continued studies on resistance to change using other mainstream leader models in the context of project management, which is the strategic intent of this study.

The literature survey. Academic, scholarly databases including ProQuest, EBSCO, and Business Source Complete were used for this study. Sources such as ProQuest Dissertations and Theses Global (PQDT) were also used to find research relevant to this study. The major themes and categories for this work included resistance to change, change management theory, authentic leadership, as well as project management principles, certifications, and professional development. The literature search focused on studies dated between 2013 and 2017. The literature review lists 179 references that were reviewed in the process of this study. Of the listed references, 80% (n=143) of the articles are dated within the last five years. Select seminal resources

substantiate the historical roots of central concepts, particularly related to resistance to change. The seminal work of Lewin (1947) as well as Coch, and French (1948) present the legacy of resistance to change as related to change management models. From the seminal work, the research thread continues through 2018. The body of literature balances a historical perspective of the problem related to resistance to change with the forward-thinking leadership construct of authentic leadership.

Historical overview of the problem. Coch and French (1948) theorized that resistance to change is a combination of individual reactions to frustration coupled with a strong group identity. Observing that grievances stem from change, Coch and French (1948) furthered that group participation was crucial in limiting resistance to change and associated grievances. The effects of resistance to change appear to manifest in both behaviors and attitudes that influence the thinking of an individual as well as a workgroup. Dunican and Keaster (2015) described the problem of resistance consistent with the work of Coch, and French (1948) by observing that resistance to change is an opposing human force that impacts change processes in the workforce. Effective change management techniques such as Lewin's (1947) change model appear important in addressing resistance to change.

Lewin (1947) identified change as a living process more so than an event. Creating a dynamic three-step model of change that included unfreezing, moving, then refreezing, Lewin (1947) addressed resistance to change through the unfreezing step. Kotter (1995) presented a more expansive eight-step change model. The early steps of establishing a sense of urgency, forming a powerful guiding coalition, and creating a vision, parallel the unfreezing concepts found in Lewin's (1947, 1951) work. Applebaum,

Habashy, Malo, and Shafiq (2012) suggested in a review of Kotter's model that resistance to change as well as a commitment to change are major aspects of change management. As Kotter (1995) observed, managing change may be the ultimate test of a leader.

Authentic leadership is a practical approach to reducing negative attitudes and behaviors. Wang et al. (2014) described authentic leadership as a recognized positive approach to organizational leadership. Leaders, such as project managers, who can accept then project a change positively might be most effective in the accelerated change environment of the globalized economy. Avolio and Gardner (2005) defined the positive essential nature of authentic leadership through four key competencies of self-awareness, relational transparency, balanced processing, and internalized moral perspective. Lloyd-Walker and Walker (2011) described authentic leadership as essential to the turbulent environments where project managers operate. Lloyd-Walker and Walker (2011) went on to recommended further study on authentic leadership in the context of projects while Lundy and Morin (2013) recommended further studies on resistance to change using mainstream leader models beyond transformational leadership in project-based environments. In 2017 Bakari et al. cited resistance to change as an "important factor" (p. 175), concluding that future research should investigate the role of the authentic leadership in the development of change related behaviors.

Lundy and Morin (2013) asserted that leadership influences resistance to change. Analogously, Bradutanu (2014) gave evidence to the influence of leadership style on resistance to change in organizational leaders. How project managers overcome resistance to change is vital to modern organizational work given the reliance on project

management to drive the work process. According to Anca (2013), project management is composed of a sequence of connected time-bound activities used to implement change in organizations. Today's project managers appear to serve the role of change agents in organizations. Lloyd-Walker and Walker (2011) observed that transactional leadership could not meet the demands of project leadership. Instead, leaders should demonstrate authentic leadership behaviors to meet the demands of the 21st-century project-based environments.

The project-based environment of today's organizations may call for a positive form of socialized leadership to breach obstacles such as resistance to change. Mariana et al. (2013) summarized that the complexity and market pressures on today's organizations accelerate the pace of change. Project managers could find themselves attempting to internalize change in complex environments fixed on aggressive timelines and milestones. Effective leadership techniques that can overcome resistance to change then positively accelerate change management strategies may best meet a leader's need to accept change and the social needs of individuals and teams. The theoretical foundation of organizational commitment (Meyer & Allen, 1991) makes clear the importance of leadership behaviors to developing positive affective psychological states. As described by Rego et al. (2016), authentic leadership is integral to organizational commitment, and authentic leaders tend to socialize elevated levels of organizational commitment. How authentic leadership behaviors relate to the psychological state of resistance to change shed further light on the theory of this study.

Identification of the Gap

A research gap describes the difference between what is known in a research field and what is not yet know. The following review of the societal context, research evolution, discovery, and definitions show a research gap in the leadership domain deserving further study. A review of the extant research literature on authentic leadership and resistance to change presents a gap in the empirical framework of this domain. Researchers have not sufficiently studied the relationship between authentic leadership and resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. The following gap description demonstrates the logical relationship between the two constructs.

Lundy and Morin (2013) analyzed how leadership affects resistance to change. The researchers based the study on the research question "What actions, behaviors, and attitudes of the project manager, if any, can potentially reduce resistance and facilitate change" (Lundy, & Morin, 2013, p. 52). All participants in the study had a minimum of five years of project experience, and the majority were project managers and directors. Citing both leadership and formal project methods and competencies such as those found in the PMI's Guide to the Project Management Body of Knowledge and the United Kingdom's Office of Government Commerce's PRINCE® project management methodology, showed instrumental in reducing resistance to change. The researchers recommend further studies into various aspects of project management leadership that

affect project performance. The compelling gap displayed in the societal context of the extant research gives further impetus to this study.

The Gap: Researchers have not sufficiently studied the relationship between authentic leadership and resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. The following gap description demonstrates the logical relationship between the two constructs.

Societal context. Project managers must influence organizational outcomes in an environment of increasing change. Resistance to change challenges leaders who must generate a sense of commitment to change in self to positively project the strategic direction of a given organization to followers. Applebaum, Degbe, MacDonald, and Nguyen-Quang (2015a) found that leadership behaviors act as shaping inputs that regulate a leader's predisposition to resistance to change. A leader's ability to identify and exercise leadership behaviors that overcome dispositional resistance to change could positively impact effectiveness in the society of project managers. While existing research (Maqbool et al. 2017) showed evidence of relationships between the project manager's leadership competencies and project success, the potential ameliorating relationship between authentic leadership behaviors and resistance to change remained undiscovered.

Project managers work as middle managers who must accept change and lead organizational transformations. To act as a change agent, project managers must first

overcome intrinsic resistance to change, accept transformative ideas, and then lead through ambiguity. According to the research of Shao (2017), those who work in project management must possess specific leadership competencies to bridge between organizational strategy and project context effectively. The ability to manage in the middle calls for specific leadership skills that often intersect with resistance to change. Applebaum et al. (2015b) observed that resistance to change prevents the degree of positive agglomeration needed to achieve a successful transformation. Those project managers with authentic leadership acumen may reduce emotional reactions to change in a way that contributes to a successful, positive, and transformative disposition.

Research evolution. The exploration of the original literature shows that leadership and resistance to change present long-standing problems to organizational leadership. As early as 1948 Coch and French identified the organizational need to correct the undesirable effects of resistance to change. Predicated on Lewin's (1947) force field analysis of resistance to change other authoritative change management experts such as Kotter (1995) and Schein (1996) presented change management constructs to address the corrosive effects of resistance to change. More recently, researchers associated change management practices with project management processes. Hornstein (2014) observed that while project and change management use different terms, they are mutually supportive to the end of organizational success. Also, the researcher associated the dynamics of leadership and resistance to change with project success.

A broad range of studies has variously explored leadership, project management and resistance to change. In 2011 Lloyd -Walker and Walker presented a capability

maturity model to track authentic leadership attributes in project leaders while calling for further authentic leadership research in a range of project-based environments. Lundy and Morin (2013) used qualitative methods to study project leadership and resistance to change using Dulewicz and Higgs' (2005) transformational leadership framework, which resulted in a recommendation of further research relative to resistance to change using other mainstream leader models. Other researchers such as Packendorff et al. (2014) presented a process ontology while examining project leadership and change. Novo, Landis, and Haley studied leadership and its role in successful project management observed that leadership styles, behaviors, and attitudes evidenced by project managers are critical to influence and success. The extant literature reflects a persistent pursuit of understanding in the broad domain of project leadership and change.

Over time the researchers appeared to focus on the integration of project management, resistance to change, and change management techniques. According to Taher and Krotov (2016), among several leadership components "weak project leadership can quickly give rise to powerful, resistant factors" (p. 160). The examination of positive leadership forces in contrast to negative resistive forces showed the continued need for further studies in this broad area. While the research of Taher and Krotov (2016) did not cite authentic leadership, it did characterize a participative style of leadership as more useful to mitigating resistance than more authoritarian styles. The research of Alavi and Gill (2017) further asserted that authentic leadership positively augments participative leadership, particularly in change-oriented environments. The emerging findings of such research propelled recent research discovery.

Discovery. The most recent research gravitates to project leadership as a factor of project success. Novo et al. (2017) studied leadership and its role in the success of project management and concluded a project manager who uses the wrong leadership style might negatively affect the success of a project. The critical nature of leadership in project management shows the importance of such studies. Other studies such as Krog and Governder (2015) examined the relationship between servant leadership and employee empowerment, commitment, trust, and innovative behavior, and its significance in project management. The focus on servant leadership validated the need to examine the value orientation that the project manager exercises. Given the value orientation of authentic leadership following studies appear inevitable.

While the contemporary trends in research appear focused on leadership and organizational success, the primacy of the leader should not be dismissed. As Bailey and Raelin (2015) observed, organizations do not resist change people do. Key to any project success is the disposition of the individual project manager. Novo et al. (2017) furthered that managerial and emotional competencies as factors of leadership have critical causative effects on leaders and their success. Any potential competencies that may optimize the relationship between leadership traits and the disposition of resistance to change emerge as an important discovery.

Definition. Leaders such as project managers are not immune to resistance to change. As described by Bradutanu (2014) any person with organizational power tends to prefer the status quo over change. Presently there is a paucity of evidence that defines a relationship between authentic leadership and resistance to change. As evidence of this research gap, Bakari et al. (2017) recommended further studies on the role of authentic

leadership and behavioral support for change, citing Oreg's (2006) research on dispositional resistance to change. Such research support may reveal authentic leadership as a cognitive precursor that mitigates a disposition of resistance to change.

The limitations of present research further define the research gap as it relates to the constructs of authentic leadership and resistance to change. While Lundy and Morin (2013) limited their research to the nature of transformational leadership and resistance to change in Canadian federal government project work, the researchers declared that there had been few studies on the impact of project leadership upon resistance to change. Bakari et al. (2017) limited their research on authentic leadership and change to a single organization. This research overcame similar limitations and bridged a critical knowledge gap by studying a population of project managers across the USA independent of industry type. This study addressed the gap in the understanding of how authentic leadership relates to resistance to change by addressing the following problem: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change.

Theoretical Foundations and Conceptual Framework

As Walumbwa et al. (2008) suggested, the primary theoretical components of authentic leadership include: (a) the leader, (b), the leader process of influence on the follower (employee), (c) the follower, and (d) the organization. The study focused on the leader aspect of authentic leadership and utilized Meyer and Allen's (1991) organizational commitment theory (OCT) as a guiding theory. Authentic leadership is integral to organizational commitment. Authentic leaders tend to demonstrate elevated

levels of organizational commitment and in turn promote commitment among their employees (Aztecan, Isai, & Karadağ, 2015; Rego et al. 2016).

Using OCT (Meyer & Allen, 1991), this study examined if the behavior of authentic leadership significantly influences the psychological state of resistance to change. This study also examined the condition of PMP® certification on authentic leadership, resistance to change, and whether PMP® certification significantly moderates the relationship between these two constructs. PMP® certification is an indicator of project manager competence, and yet there is little empirical evidence that certified project managers are more successful than non-certified project managers (Ramazani & Jergeas, 2015). This study not only addressed the gap in the literature regarding authentic leadership effects on resistance to change, but it also addressed whether PMP® certification competencies may serve as a moderator between authentic leadership and resistance to change.

The linkage between authentic leadership and the OCT construct demonstrates the theory's utility for this study. Walumbwa et al. (2008) cited organizational commitment as defined by Meyer and Allen (1991) as a critical outcome of authentic leadership. So much so that Walumbwa et al. (2008) hypothesized, then demonstrated, that authentic leadership positively relates to organizational commitment when controlling for ethical and transformational leadership respectively. Other researchers such as Leroy, Palanski, and Simons (2012) observed that authentic leadership behaviors drive organizational commitment by aligning words and actions, which in turn facilitates adaptations. The theory of organizational commitment suggests that the interplay of behavior, conditions, and psychological state influence organizational dynamics. In the same way, this study

sought to elucidate through the lens of OCT if the authentic leadership behaviors mitigate the psychological state of resistance to change, given the condition of PMP® certification.

Luthans and Avolio's (2003) seminal research described authentic leadership as a process drawn from both a leader's positive psychological capacities and a highly developed organizational context, which results in greater self-awareness and positive leader behaviors. According to Datta (2015), concerns related to the ethical conduct of today's leaders drove interest in authentic leadership. Fusco, O'Riordan, and Palmer (2015) further described a trend of high profile business scandals such as Enron's bankruptcy, and Lehman Brother's toxic loan practices that produced a keen interest in authentic leadership. Authentic leadership and its potential relationship to resistance to change may now present practical considerations for project managers.

The use of authentic leadership appears to build positive psychological states resulting in the accumulation of an individual's positive psychological capital. This behavior to state relationship reflects the tenants of Meyer and Allen's (1991) OCT. The positive psychological capital, according to Wang et al. (2014), is a recognized core construct characterized by hope, efficacy, resiliency, and optimism. The link between positive psychological capital and authentic leadership appears essential to overcoming the state of resistance to change. Lizar, Mangundjaya, and Rachmawan (2015) observed that such psychological capital has a direct effect on an individual's readiness for change, while Wang et al. (2014) suggest that it is positive psychological capital that makes authentic leadership useful.

Zubair and Kamal (2015) further concluded that there is a significant positive association between authentic leadership and psychological capital. Today's

organizational leader's today must produce a positive framework for change to overcome the status quo that anchors resistance to change. Reflective of Meng et al. (2016) observations on psychological safety, authentic leadership appears to build the kind of positive psychological context needed to make organizational changes. Leaders must create a readiness for change while overcoming the effects of resistance to change.

Leaders must employ behaviors that engender positive psychological capital in self and in others to create readiness for change. Beal, Stavros, and Cole (2013) conducted an empirical analysis of psychological capital and resistance to change on organizational citizenship behavior, which showed a reduction in resistance to change when leaders employed positive psychological capital. Those leaders who employ authentic leadership traits may induce elevated levels of positive psychological capital as described by Zubair and Kamal (2015). Beal et al. (2013) further stated that elevated levels of psychological capital could overcome the effects of resistance to change on an organizational change initiative. Such influences on resistance to change could prove significant to the project-based environment of today's globalized workspace.

Andersson (2015) synthesized resistance to change as an emotional reflection of the people who comprise an organization; it is an actor-network reaction to the forces of change. Resistance to change is a human reaction to the insecurities that change brings, requiring project managers to understand self and the social network considering those insecurities. García-Cabrera and García-Barba Hernández (2014) described the theoretical underpinnings of resistance to change concerning insecurities and unknowns.

García-Cabrera and García-Barba Hernández (2014) suggest that resistance to change is an individual dissonance to the unknown. Randles, Inzlicht, Proulx, Tullett, and

Heine (2015) observed that dissonance prompts unpleasant cognitive arousal through violations of expectations, which reflects disconnects between relevant thoughts and familiar frameworks. In the same way, Jost (2015) described resistance to change as a disruption in cognitive consistency between proposed change and familiar work norms. In an environment of project discipline built upon schedules and milestone fidelity, such disruptions create confusion, delay, and commitment challenges.

According to the Project Management Institute ("PMI's," 2017), as many as 60% of organizations use change management as an integral part of managing projects. The same survey showed project management skills as a top organizational concern. In 2016, 72% senior executives surveyed by the Project Management Institute ("PMI's," 2016) rated creating a culture receptive to organizational change as somewhat to very important, yet as many as 29% of project failures were attributed to poor change management. As Hornstein (2014) observed, the integration of project management and organizational change management is now a necessity to a commitment to change.

Many project-based organizations seek to enhance organizational efficiency and project manager's skills through the PMI's PMP® certification. According to the PMI ("PMI Fact File," 2017), there are 484,524 PMI members in good standing, 761,905 PMP® certified project managers and another 33,383 managers with a certified associate in project management worldwide. Ramazani and Jergeas (2015) reported that while the expense devoted to certifications and project methods are significant, there is little evidence that the expense translates into practical results. The moderating effects of the condition of PMP® certification on authentic leadership and resistance to change drive the third question presented in this research study.

The research questions in this study align with the OCT (Meyer & Allen, 1991) foundation. The researchers recognized that commitment generates from antecedent variables that generate certain behavioral states. In the OCT construct affective commitment is a result of patterns of work experiences that generate feelings of comfort. Reflective of the routine seeking behaviors of resistance to change, the sense of commitment to norms may generate a resistance to change reflex.

In this study, the first research question seeks to understand what extent, if any, does authentic leadership predict resistance to change. This question ultimately evaluated if the behavioral factors of authentic leadership significantly influence the psychological state of resistance to change. This behavior to disposition dyad reflects the fundamental OCT framework. The second research question examines to what extent do each of the four authentic leadership components significantly predict resistance to change. The authentic leadership variables which include self-awareness internalized moral perspective, relational transparency, and balance process add behavioral dimensions to authentic leadership. The condition of PMP® contributes further to the OCT (Meyer & Allen, 1991) framework.
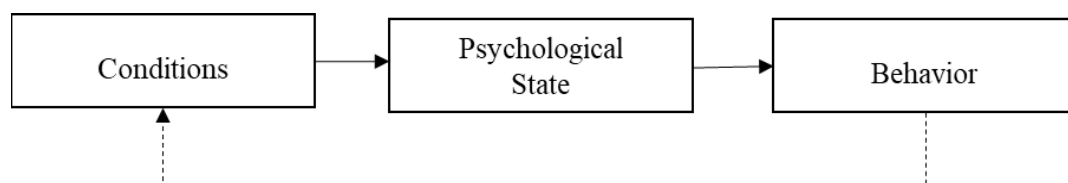
Figure 2. Meyer and Allen's (1991) OCT attitudinal perspective.

In sum, the variables presented in this study reflect the Meyer and Allen (1991) OCT elements of behavior, psychological state, and conditions. Lundy and Morin (2013) recommended further study into the links between resistance to change, project leadership and formal project methodology. Bakari and Hunjra (2017) found that

authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. Through the theoretical foundations of OCT, this study examined if the behavior of authentic leadership significantly influenced the psychological state of resistance to change. This study also examined whether formal project management methodology as evidenced by PMP® certification significantly moderated the relationship between these two constructs.

Review of the Literature

The following review clarifies the themes of the psychological state of resistance to change, change management, the behaviors of authentic leadership, and project management practices and certifications. The objective is to provide a comprehensive overview of the literature found in the body of knowledge relative to the described themes. According to Daigneault, Jacob, and Ouimet (2014), systematic synthesis of literature leads to definite conclusions about what is known and what is not known. This synthesis of existing research clarifies the gap in the literature regarding authentic leadership effects on resistance to change. Additionally, the review shows the overall methodological strengths and weaknesses in existing research. Ultimately the comprehensive review of the literature describes the critical nature of resistance to change to organizational success through project managers.

Theme 1: Resistance to change. Resistance to change is a significant barrier to organizational success in the globalized market space. As the rate of change accelerated over time resistance to change became a continuous challenge to leaders both personally

and as a workforce phenomenon. García-Cabrera and García-Barba Hernández (2014)
asserted that the state of resistance to change manifests in the three dimensions of
thoughts, feelings, and behaviors. The triad of reactions resulting in resistance to change
can produce counterproductive results in individuals, work-teams, leaders, and
organizations. Project managers must be self-aware of their change responses through
thoughts, feelings, and behaviors and how they affect others. Additionally, leaders must
attend to mitigating resistance in workgroups on a regular basis. Resistance to change has
historically challenged leader and organizational effectiveness. Resistance to change
demands an understanding from organizational leaders who confront organizational
unknowns.

Resistance to change creates anxiety, annoyances, and counter-productive
behaviors. According to Ming-Chu, and Meng-Hsiu (2015), resistance to change is the
anxiety generated from moving from a known to an uncertain future or situation, which
generates counterproductive attitudes and behaviors. The counterproductive responses
represent a desire for normalcy; to maintain known patterns over risking the unknown.
Dunican and Keaster (2015) observed that individuals are creatures of habit who find
organizational pressures to change an annoyance. Such an annoyance points to the
anxiety of the unknown. As further defined by Dunican and Keaster (2015) it is human
nature to resist change when uncertainty threatens the balance of control. The sense of
instability that creates an opposing force to change appears as resistance to change. Many
researchers refer to overcoming resistance to change as an act of unfreezing.

Unfreezing is the first step in a more substantial change management model that
suggests individuals must abandon one construct before embracing another. Lewin's

(1947) seminal research introduced the idea of resistance to change through the concept of unfreezing. Many people initially react by clinging rather than abandoning the known, which appears as resistance to change. Dunican and Keaster (2015) characterized the resistive behavior as the adverse human forces that impact change negatively. The seminal work of Coch, and French (1948), further substantiates resistance to change as an individual's reaction to the frustration of change with strong reinforcing group forces. Such definitions reflect the summation of García-Cabrera and García-Barba Hernández (2014) who referred to resistance to change as a form of cognitive dissonance to the unknown.

Cognitive dissonance. When thoughts conflict or oppose, a sense of dissonance results. McKimmie (2015), described cognitive dissonance as an adversarial state that results from inconsistency between cognitions. This sense of conflict can present a challenge between two opposing forces, known and unknown. In such instances, Randles et al. (2015) asserted that people become motivated to dispel the arousal of dissonance through accommodations. When the unknowns override the ability to accommodate the difference, Randles et al. (2015) reported that individuals then sense the uncertainty that results in attitudes and behaviors characteristic of an adversarial state. It seems that in such a state some individuals seek the comfort zone of familiar habits.

The act of returning to a traditional idea appears to reinforce the reactive premise of dissonance. According to Bolstad, Dinas, and Riera (2013), a retreat to familiar habits is consistent with cognitive dissonance theory, which suggests that when attitudes and behaviors, such as a new work process, are not consistent with historical ideas and practices then a degree of discomfort drives people to react. Such behaviors are innate

tendencies of individuals and groups. According to Stoverink, Umphress, Gardner, and Miner (2014), teams' experience a similar shared psychological discomfort resulting in team dissonance. When a team's experience dissonance the normal social environment provides a place of stability in the face of uncertainty. For individuals and teams alike, the introduction of ideas, processes, or change initiatives arouses a sense of dissonance.

Dissonance is both an individual reaction and a team influence. Leaders such as project managers must become both self-aware, and conscious of the social dynamics relative to the cognitive dissonance of resistance to change. Stoverink et al. (2014) observed that a group experience of injustice might prompt dissonance. Leaders must understand their responses to change to avoid projecting resistive qualities to others. It is a key leader task for project managers to recognize and understand the effects of dissonance in self and on a team, which may give rise to resistance to change manifest in counterproductive thoughts, feelings, and behaviors.

Leadership, Dissonance, and Resistance: Lundy and Morin (2013) observed that resistance to change is a dynamic phenomenon. Leaders must find means to overcome the effects of dissonance that leads to resistance. Resistance resulting from dissonance can inhibit organizational progress. García-Cabrera and García-Barba Hernández (2014) linked resistance to change and cognitive dissonance by stating that that people pay attention to information that reinforces their desired conclusion. This imbalanced predisposition for favorable group norms over unknowns can in effect freeze an organization in traditions that hampers progress.

In a team, dynamic dissonance appears to drive a group to the traditions of social norms. Stoverink et al. (2014) explained that people evaluate events or behaviors using

normative rules and that when rules are broken the then dissonance results. This affinity for the group order may move quickly from dissonance to resistance, and on to group behaviors and attitudes in conflict with broader organizational goals. Conversely, Jost (2015) observed that trustworthy and credible people more likely persuade members of the same social group. Credible project managers using certain leadership behaviors may present keystone indicators to groups which could mitigate resistance to change.

Leaders who understand the social affinity of groups relative to change, dissonance, and resistance, may find value in leader models that facilitate openness, where innovative ideas flourish. Dunican and Keaster (2015) described today's organizational change climate as a stressful environment that creates anxiety and uncertainty. The same characteristics of anxiety and uncertainty lead to a dissonance that in turn drives a desire for consonance. While leader techniques may help, Berkovich (2014) suggested that it is not an over-fascination with leader techniques, rather an open relational disposition that develops the mutuality a leader needs with the modern workforce. Hussain et al. (2016) observed the crucial link between leader behaviors and team involvement within Lewin's unfreezing step of the change model context. Those leaders, such as project managers, who implement change must first understand how change and resistance interact within self to build a mature, positive, and persuasive disposition that overcomes resistive behaviors such as routine seeking in self and influences others.

Routine seeking behaviors. Michel et al. (2013) cited four reliable factors related to resistance to change including, routine seeking, emotional reaction to imposed change, cognitive rigidity, and short-term focus. The tendency to seek routines appears a means to

finding stability when faced with too many unknowns. Oreg and Sverdlik (2011) described routine seeking as the degree that an individual enjoys stable and routine environments. This aspect of resistance to change may have important implications to project managers as the project management environment depends upon routine processes. Laslo and Gurevich (2014) asserted that project management techniques often rely on a simplified deterministic approach to routine work. While those projects with ample time and resources may succeed in such a construct, Laslo and Gurevich (2014) observed that the complexities and pressures of time and cost related to projects often make routine work an obstacle to meeting expectations.

According to Laslo and Gurevich (2014), the challenge of routines found in project management is that it does not consider uncertainties. In the same way, the uncertainties of change impact project managers, teams, and organizations. Canato, Ravasi, and Phillips (2013) described the effects of uncertainty as 3M attempted to impose Six Sigma methods in the workplace. The research showed that individuals and work teams became less than accommodating when change agents threatened deeply held beliefs and routine norms. At 3M the perceived threat led to significant tension and resistance to the change due to disruptions in the routines of the work culture. Laumer, Maier, Eckhardt, and Weitzel (2016) observed that routine seeking is a predictor of the perceived usefulness of a change. In the case of 3M, it appears that the utility of Six Sigma was not clear resulting in an emotional pull to old routines. Despite the renown of Six Sigma as a proven method of efficiency, emotional reactions resulted.

While it appears that emotional intelligence may moderate resistance to change, when uncertainty arises due to change, routine seeking behaviors likely follow, often with

emotion. According to Di Fabio et al. (2014), emotional intelligence relates to resistance to change and routine seeking, which may result in emotional reactions to imposed changes like the example of 3M. While imposed change appears to accelerate uncertainty, any change may bring degrees of routine seeking. A return to the individual or organizational knows may well produce a sense of stability for those who sense uncertainty in a change. As Oreg and Sverdlik (2011) described, a sense of instability creates a predisposition to resist change for some, while others sense a threat to autonomy which also drives resistance to change. The patterns of normal routines present an alternative to the uncertainty that may create obstacles to efforts to induce a change in individuals, teams, and larger organizations.

How a leader introduces change may influence the amount of resistance to change generated from the activity. It appears that imposing change through more authoritarian means creates objectionable reactions. As Canato et al. (2013) described, leaders should invest in sense-giving efforts to reduce culture dissonance, over more imposing approaches. The question of leadership behaviors during the introduction of change presents a practical potential for leaders in project-based work that is laden with change. This study sought to understand if authentic leadership manifest in project managers can reduce the psychological state of resistance to change that produces routing seeking of the status quo from a leader's perspective.

Status quo and the forces of change. According to McKay, Kuntz, and Näswall (2013), status quo generates a sense of security through routines that influence an individual's sense of trust in an organization. Threats to the status quo may create resistance to change manifest in counterproductive behaviors and attitudes. The

sensitivity to the status quo appears central to the forces that influence change. Baesu and Bejinaru (2013) insightfully observed that rather than maintaining the status quo, leadership is a change generating process. Lozano (2013) elaborated that change is the process of moving from an unstainable status quo to a new equilibrium. While such movement from the status quo generates resistance, the leader must manage the change transition in self and others.

Change implies that a leader must abandon or alter the current state in the process of improvement. Baesu and Bejinaru (2013), described change as the alteration of the present state into a better one. From an organizational perspective, Ng and Yazdanifard (2015) stated that change is an adaptation to improve outputs. Change adaptations call for a release of the status quo to move to an improved output. The forces between the status quo and the evolution of change create the emotional tension of resistance to change. Baesu and Bejinaru (2013) furthered that individuals tend to focus on what they must give up, rather than the improved gain from a change. The focus away from the potential improvement shows the leader challenge relative to the forces of change.

Forcefield analysis suggests that what happens in a field depend upon the forces throughout the field. Jost (2015) explained that Lewin (1951) used terms of force field analysis to develop a field theory on resistance to change. In the case of change, the driving forces of positive change may become at odds with the restraining force of the status quo, which tends to push against change. Burnes (2015) associated Coch and French's view with the perspective of Lewin by observing that resistance to change generates from system imbalances or dissonance within a force field.

To overcome the unbalancing forces, a leader may add force in the desired direction of change or reduce the opposing force of resistance. According to Lewin (1947), the driving forces of positive change when checked by the restraining forces of status quo inhibit change. Taher and Krotov (2016) surmised that weak project leadership could generate powerful, resistant forces that dissipate energies and stall success. It appears that a key leader task for today's project leaders is to manage change by overcoming the forceful status quo of resistance to change using positive leadership behaviors.

Theme 2: Change management. In the previous section, the discussion focused on the central issue of resistance to change, which constitutes the primary criterion variable in this study. The discussion clarified the challenge of resistance to change to individual and organizational success. Prediscan and Roiban (2015) asserted that openness to change is now a necessary survival mechanism in the fast-paced, globalized environment. The problem of resistance to change appears to increase with the rate of change in the globalized economy. For organizational members, such as project managers, resistance to change emerges as a natural response to the uncertainty of unknowns. Over time many experts presented change management theories. The change management efforts appear as steps or procedures much like project management or other process models. Each of the following frameworks addresses the challenge of resistance to change early in the procedure. In the 1940's change management experts framed change management techniques to overcome resistance to change in attempts to enhance success rates.

According to Kuipers et al. (2014), change management theory emphasizes the process of change in a prescribed manner yet lack contextual considerations. Under such step-by-step processes, the nature of change becomes procedural. Viewing change management regarding a rational-adaptive perspective, Kuipers et al. (2014) asserted that change function concerning intentional acts and choices. While change management processes appear important, Mehta, Maheshwari, and Sharma (2014) found that change success depends on both task-oriented, and people-oriented behaviors. To understand the domain of change management is to comprehend a task-oriented perspective in the context of self and others, which is akin to the work of a project manager.

Project professionals must have change management plans to manage the forces of change. Lozano (2013) observed that managerial approaches to change rely on strategic change. While the varied nature and scope of change in organizations are not all strategic, today's globalized market requires organizations to include change strategies in their business plans. Resistance to change at the organizational level can impede growth and even survival. Fuchs and Prouska (2014) observed that the experience of poor change management is likely to produce resistance to change. Organizational leaders must increasingly institute change into structures, processes, and strategies (Fuchs & Prouska, 2014). The need for a change management strategy appears a significant element to enhance agility at every level of an organization, from the project manager to the CEO. As observed by Lewis, Andriopoulos, and Smith (2014) it takes leadership to manage the tensions produced by the demands of strategic agility.

Today's organizations must continuously refine change management frameworks through leadership to address the needs of individual contributors, leaders, teams, and the

entire organization. Organizational systems rely on adaptability to adjust to the dynamics of globalized competition. As presented by McKay et al. (2013), the rate of change failure reported by organizations throughout the world, often rooted in a primary state of resistance to change, calls for an understanding of sustainable organizational change success. Hornstein (2014) observed that while project management and change management may use different terms and methods the two are complementary and mutually supportive disciplines that contribute to modern project success. It is for these reasons that change management has been and will likely continue to be a central premise of operational strategy in project-based organizations that compete in the globalized market. While the need is as high now as any time in history, Lewin (1947) introduced much of the foundational work in change management decades ago.

Lewin's (1947) change management model. Lewin's (1947) change construct of unfreezing, move, refreeze presented a seminal three-phase model of change management. The change management model replicates force field theory where change divides into two opposing categories. The first force is a positive force for change, and the second resists change. Status quo is the condition where the two forces neutralize one another in equilibrium. As Lozano (2013) observed, change enacts a disproportionate force in the organizational system. The effort of the force drives a transition to a new equilibrium or "quasi-stationary social equilibria" as Lewin (1951, p. 202) described. In theory, the three-phase management model transforms the change from a vision into a stable operating system. The first phase is an unfreezing step that reveals the differences between the present reality and the desired state.

Table 1.

Lewin's 1947 Change Management Model

Theorist	Phase 1: Introduction	Phase 2: Change	Phase 3: Stabilize
Lewin	Unfreeze	Move	Refreeze

How a leader may unfreeze the traditions of a project work culture grounded in standard processes, minimize resistance, and effect change is tantamount to operational success. Pointing to the seminal work of Lewin (1947), Jost (2015) observed that a leader must work to unfreeze resistance to change. This fundamental observation is foundational to Lewin's (1951) model of change. The social forces of organizational work revolve around constancy and resistance to change. While constancy is the comfort zone of traditions and knowns, resistance to change is a reaction to a changing force of unknowns. To unfreeze is to move an individual or group thinking from traditional patterns to a new possibility, which in turn creates the motivation to abandon traditional patterns and ideas. Once unfrozen, the ability to move or change becomes the positive force of change.

According to Manchester et al. (2014), the moving step of change allows for trial and error and more open thinking about change. As innovation increases new social norms emerge that facilitate positive behaviors, which in turn further weakens the force of resistance to change. This step in the change model is dynamic as a transition from one state of equilibrium to another is a kinetic operation. The momentum for change appears to depend upon an open, positive attitude for the change generated from essential communications about benefits. When an individual, workgroup, or organization understand the benefits, the unknowns recede, and the transition moves with the positive

force of change over resistance to change. How leaders, such as project managers, may facilitate this positive attitude and freeze it in a new paradigm is vital to the success of change initiatives.

The third step of refreezing constitutes a revised or new system of rules and norms. The goal of refreezing is to create a new equilibrium that provides a sense of security and predictability. According to Manchester et al. (2014), refreezing is the point at which a change becomes the norm, new behaviors overtake old, and the normalcy of the new behaviors institutionalize. According to Lewin (1951), acknowledgment of the new behaviors mitigates a regression back to the previous status quo while serving as evidence of the transformation over resistance to change. Just as Lewin (1951) viewed resistance to change as a dynamic force to overcome, Schein (1996) viewed resistance to change as a defensive capacity in both individuals and groups and characterized Lewin's (1951) model as an empirical change management foundation.

Schein's (1996) adaptive coping cycle. Schein (1996) proposed that the essence of change management is a matter of psychological safety. Resistance to change appears as a defensive response towards maintaining the psychological safety of the status quo. As Ortega, Van den Bossche, Sánchez-Manzanares, Rico, and Gil (2014) observed, psychological safety is a central mechanism to how change-leaders influence performance. Meng et al. (2016) summarized that authentic leadership enhances the kind of psychological safety that encourages creativity and innovation. Reflective of Lewin (1947) positive force toward moving, positive psychological safety developed by authentic leadership competencies may provide a force to overcome resistance to change and towards the new possibilities of a change initiative.

Schein (1997a, 1997b) framed change management in a six-step adaptive coping cycle that began with an internal or external change initiative and ends with a renewed organization. The six steps include:

1. Sense a change in the internal or external environment.

2. Get the information to the right place for processing.

3. Digest the information and draw the right conclusions.

4. Make necessary internal changes without undesirable side effects.

5. Develop new actions.

6. Obtain feedback on the new actions.

Reflective of Lewin's (1951) unfreezing step, Schein's (1997a, 1997b) first two steps call for a positive force to overcome the anxiety that results in resistance to change. Meng et al. (2016) asserted that the capacities of psychological safety overcome disconfirmation related to the unknowns. Steps three through five of the adaptive coping cycle reflect the tenants of the moving step where change occurs as innovative ideas and methods emerge. In the last phase of the cycle, Schein (1997a, 1997b) returns to Lewin's (1951) methods of refreezing by advocating for sensitivity to feedback and normalization of the change both relationally and systematically as some new equilibria. While more granular and systematic in his approach, Schein (1996) acknowledged change in a managed learning construct reflective of the work of Lewin (1951). Other change management models continued in the same pattern of increased granularity, yet reflective of the unfreezing, moving, refreezing concepts to overcome resistive forces.

Table 2.

Lewin - Schein Comparison

Theorist	Phase 1: Introduction	Phase 2: Change	Phase 3: Stabilize
Lewin	Unfreeze	Change	Refreeze
Schein	Sense Change Gather Information	Draw Conclusions Make Changes Develop Actions	Obtain Feedback

Kotter's (1995) change management model. According to Pollack, and Pollack (2015), Kotter's (1995) eight-step change model is one of the most widely recognized models for change management. The steps detail a smooth flowing phased progression from establishing a sense of urgency for change to anchoring new approaching into the culture. Pollack and Pollack (2015) noted that Kotter's work emphasizes leadership and the culture of change. This insight on leadership parallels Schein's (1997b) views on the positive psychology of leading change.

Kotter (2007) observed that change paralysis could come from having too many managers and not enough leaders. Pointing to the balance between operating procedures and the psychology of change, Kotter (2007) described the leader's role in the change management. The eight steps of Kotter's (1995) change model include:

1. Establish a sense of urgency.

2. Form a powerful guiding coalition.

3. Create a vision.

4. Communicate the vision

5. Empower others to act on the vision

6. Plan for and create short-term wins

7. Consolidate improvements and produce still more change.

8. Institutionalize new approaches.

According to O'Malley (2014), Kotter's (2007) change management model is reflective of Lewin's unfreezing, moving, refreezing model. O'Malley (2014) furthered that steps 1 to 3 relates to the unfreezing phase, steps 5 to 7 are elements of the moving phase, step 8 is essentially refreezing, while step 4, communication, serves across the spectrum in both models. While more numerous in steps, Kotter's (2007) change management foundation appears consistent with Schein (1996) and Lewin (1951). In each case, positive psychological forces are essential to overcoming resistance to change early in the process.

Table 3.

Lewin-Schein-Kotter Comparison

Theorist	Phase 1: Introduction	Phase 2: Change	Phase 3: Stabilize
Lewin	Unfreeze	Change	Refreeze
Schein	Sense Change Gather Information	Draw Conclusions Make Changes Develop Actions	Feedback
Kotter	Sense of Urgency Guiding Collation Create a Vision	Empower Others Short-Term Wins Consolidate	Institutionalize

As Baesu and Bejinaru (2013) observed, a leader must accept and promote change while customizing management styles according to the group situation. According to Kotter (2007), change creates new operating systems, which demands leadership. Emergent research shows broad agreement that projects and programs now deliver change that demand specific leadership competencies (Martinsou, & Hoverfait, 2017), which are necessary to mediate the pressures of competitive organizations. The elements of leadership, overcoming resistance to change, and process management presents the fundamentals of change management. Meng et al. (2016) noted that certain leader

behaviors such as authentic leadership traits, contribute to the kind of positive psychological safety that Schein (1996) described as instrumental to overcoming the force of resistance to change.

Theme 3: Authentic leadership. According to Wang et al. (2014), authentic leadership is a "positive, genuine, transparent, ethical form of leadership" (p. 5.) Tonkin (2013), furthered that authentic leadership relies on leader behaviors to build positive psychological capital in self and others. The ability to internalize, then project positive, authentic behaviors appears fundamental to the leadership approach. Reflective of Luthans and Avolio's (2003) seminal research on authentic leadership, the positive psychological abilities and behaviors of leaders create psychological safety and security. The characterization of authentic leadership to psychological safety appears important when considering resistance to change. As Schein (1996) proposed, the essence of change management is a matter of psychological safety. The ability of a project manager to build positive psychological capital and safety through a posture of authentic leadership may result in breakthroughs over resistance to change.

Mohanty and Kolheq (2016) explained that psychological capital represents the motivational potential a person possesses that gives strength to succeed. The potential or psychological reserve, which Mohanty and Kolheq (2016) characterized as a capital, may fund a person's ability to openly preserver and achieve. Lizar et al. (2015) asserted that positive psychological capital, induces individual readiness for change, through the framework of self-efficacy, optimism, hope, and resilience. Authentic leadership may generate and compound a safety stock of the kind of positive psychological capital needed to persist through the uncertainties of change.

The research of Beal et al. (2013) revealed that resistance to change moderated the effect of positive psychological capital on organizational citizenship behaviors. Resistance to change unchecked may deplete psychological capital and give rise to counterproductive behaviors. Alternatively, Wang et al. (2014) suggested that authentic leadership generates positive psychological capacities while establishing willpower. While the relationship between the forces of authentic leadership and resistance to change is not clear, the resulting positive psychological resources of authentic leadership shows potential to impact resistance to change. Beal et al. (2013) recommended that organizational leaders should seek to reduce resistance to change while increasing those organizational resources that affect a positive organizational orientation.

Fallatah, Laschinger, and Read (2017) demonstrated the positive effects of authentic leadership on organizational identification. Those leaders who demonstrate authentic leadership generate organizational identification in others, which in turn enhances organizational commitment overall. As described by Rego et al. (2016), authentic leadership is integral to organizational commitment, and authentic leaders demonstrate elevated levels of organizational commitment. Project managers who can develop and project authentic leadership behaviors are likely to produce positive psychological capital and organizational commitment through the four behavioral competencies of authentic leadership both in self and in followers.

In contrast, Syed Muhammad, Choi, Goh, Syed Muhammad, and Shah (2015) studied the moderating effect of top management support on the relationship between transformational leadership and project success. While the study showed that project managers could use transformational leadership to enhance success, the research was a

top-down approach that did not account for resistance to change in project managers. Comparably, Maqbool et al. (2017) concluded that project managers who demonstrate transformational leadership behaviors ensured project success but did not address the effects of authentic leadership. To view the relationship between the essence of authentic leadership and resistance to change provides a more practical view of this challenge from the project managers' perspective.

From a practical perspective, authentic leadership is a matter of congruence between what a leader believes and how the leader acts out those beliefs. The framework of self-awareness, relational transparency, balanced processing, and internalized moral perspective provides a systematic construct for leader beliefs to operate within. Men and Stacks (2014) observed that authentic leaders know what they believe and act accordingly. It is the consistency between beliefs and behaviors that resistance to change appears to challenge. For a leader to believe, say, and behave consistently is the essence of the authentic leadership construct. Leaders must neutralize the negative force of resistance to change to accept, believe, and consistently execute change in a positive way. The authentic leadership construct is a positive moral perspective, rooted in beliefs, that produces positive psychological capital.

The internal synthesis of the authentic leadership competency construct psychologically and behaviorally results in the leader accumulation of positive psychological capital. The enhanced positive psychological capital should allow a leader to exercise realistic hopefulness, trustworthiness, and an openness to innovative ideas. Wang et al. (2014) furthered that authentic leaders interpret information from a positive perspective, elevating optimism, and thoughts of possibilities. Characteristics such as

self-awareness may also contribute to how some leader's approach ideas about change and the state of resistance to change.

Self-awareness. Datta (2015) defined self-awareness as the means a person uses to make meaning of the world and how that meaning impacts self-perceptions. An efficacious understanding one's strengths and weaknesses relative to how a person may influence others shows self-awareness. Peus et al. (2012) summarized that knowing self and personal values is a precondition to the effectiveness of the other three competencies of authentic leadership. A clear sense of personal beliefs, values, and attitudes appears important to effectively developing and using relational transparency, balanced processing, and internalized moral perspective. Opatokun et al. (2013) furthered that self-awareness is the measure of a person's consciousness of self-components congruent with how others perceive them. A deep understanding of self appears to allow a leader to relate confidently to change.

According to Whiteside and Barclay (2016), self-awareness theory suggests that higher levels of self-awareness in leaders promotes higher levels of openness and fairness. In effect, self-awareness creates an evaluative perspective, which suggests any difference between self-behaviors and an individual's perception of how one should behave. As this self-evaluation increases, Whiteside, and Barclay (2016) suggest that self-awareness may become a refining filter that seeks out standards of fair and normative behaviors. Cowden and Meyer-Weitz (2016) furthered that self-awareness is an important metacognitive process that simulates self-directed change. The awareness for self-directed change may enhance a leader's ability to accept and direct change in a fair-minded way.

The study of Reams and Reams (2015) showed that successful change leaders demonstrated elevated levels of self-awareness with a capacity to remain synchronized with the overall purpose of change. It appears that those leaders who lack self-awareness tend to gravitate towards the status quo in a resistive manner, which impairs change initiatives. As Baesu and Bejinaru (2013) observed, leadership is a change generating process rather than status quo maintenance activity. It seems that to serve as a change agent, a project manager must develop self-awareness to sense a change in self as well as a direct change in others. Meyers, van Woerkom, de Reuver, Bakk and Oberski (2015) stated that self-motivated personal sensing and development, reflective of positive psychological capital, are a necessary element to many forms of success. A leader's self-awareness of the extent to which their behavior is contributing to potential change or contributing to the status quo may be central to success over resistance to change.

Marques (2013) observed that in today's organizations' leaders must reach beyond self and scrutinize self-motivations to adapt to variations in work environments. This introspective ability aligns with the tenants of self-awareness that facilitate openness and fairness. Marques (2013) further described such soft-skilled leadership as an intrinsic part of successful leadership, which forces leaders to discover how others perceive them and then self-adjust. The component of self-awareness includes more than pure awareness; according to Cowden and Meyer-Weitz (2016), it manifests in self-regulating adjustments.

Meng et al. (2016) tied similar self-conscious cognitions to authentic leadership traits. The leader's awareness of values, strengths, weakness, and motivations reflect the theoretical foundation of authentic leadership. Self-aware leaders demonstrate a vital

dimension of the authentic leadership model. Wang et al. (2014) presented self-awareness as a central characteristic of authentic leadership that promotes positive psychological capital and relational processes. It appears that those leaders with high self-awareness enhance authenticity through a process of self-reflection, personal change, and positive affect. According to Berkovich (2014), the positive effects of self-awareness when combined with a self-narration result in the expansion of a leader's innate authentic potential.

Fusco et al. (2015) grounded study on coaching and authentic leadership described self-reflection as central to authentic self-development. Unlike innate personality characteristics, the trait of self-awareness appears as a characteristic that leaders can learn and develop. As such, learned self-awareness may be a step towards self-management of resistance to change, which is now a crucial component of leading. Such techniques may also prove useful in managing project-based work where resistance to change may manifest significantly due to a grounding in procedural and process consistency. Fusco et al. (2015) concluded that the concept of the social self and the reflected-self is unique to authentic leadership effectiveness. The personal and social potential of self-awareness, when applied to the environment of project work in the globalized work environment, may show possibilities to overcome resistance to change.

Lundy and Morin (2013) study on project leadership influences on resistance to change demonstrated that self-awareness was one of nine necessary competencies for a project manager to reduce resistance to change. While Lundy and Morin's (2013) study did not center on authentic leadership, self-awareness showed important to project leader effectiveness in the face of change. Lundy and Morin (2013) concluded that while project

management competencies are useful, they are not sufficient for success in overcoming resistance to change in project-oriented organizations. Pandya (2014) also studied the critical competencies of a project leader beyond technical capabilities using the authentic leadership framework and concluded that leaders must possess essential soft behavioral leader competencies. This conclusion reinforces Marques (2013) observation that soft-skills such as self-awareness in the leadership domain are essential to success. An efficacious understanding one's strengths and weaknesses relative to resistance to change may not only reveal the authentic leadership characteristic of self-awareness it may also contribute to relational transparency.

   Relational transparency. Opatokun et al. (2013) stated that relational transparency is the process of self-disclosure while developing common understandings with others. How a leader develops relationships may dictate the level of trust and openness in the environment. Hahm (2017) furthered that relational transparency directly relates to sharing information through open and honest communication. The transparency of the leader facilitates the information sharing among members. This open relationship appears to rely on psychological empowerment and mutual accountabilities leading to positive social exchanges. The positive social exchange perspective could reflect a tolerant environment of psychological safety, which Nienaber, Holtorf, Leker, and Schewe (2015) described as a climate of acceptance and mutual respect.

   Vogelgesang, Leroy, and Avolio (2013) concluded that communication transparency is an antecedent to the kind of leader integrity that encourages an environment of engagement and work performance. If relational transparency is an essential means of demonstrating behavioral integrity, communications appear the most

explicit expression of that trait. Vogelgesang et al. (2013) also observed that a leader earns a reputation of integrity through transparent communications, which gives others a kind of stable psychological safety within the workspace. The perspective of communication transparency provides a practical means of exercising relational transparency. It appears that the efficacy of words and deeds provide the leader with the ability to build a safe environment where change is acceptable.

The dominant change management models reflect the significance of communications in the process of overcome resistance to change. The perspective of relational transparency as a function of communication presents an essential insight into the practical essence of authentic leadership. As O'Malley (2014) clarified, the fourth step of Kotter's model is communication, which is critical to all stages of change in all models of change. Mazzei and Quaratino (2013) asserted that communication helps to overcome resistance to change. Consistent with the change management model of Kotter, communication is crucial to the early stage unfreezing efforts of a change initiative. Relational transparency may shed light on the kind of leader communication that positively scripts a change.

García-Cabrera and García-Barba Hernández (2014) observed that leaders exercise cognitive acceptance rather than resistance to change when offered a rational justification of the change. Relational transparency may provide the means to maximize the cognitive acceptance of a change. While more authoritarian approaches to work relationships may have merit in certain conditions, the more open relational approach appears to impact change initiatives. Consistent with the observations of Gilstrap (2013),

a more open structure enhances communication channels between elements previously seen as isolated or restricted by lines of authority.

Wang et al. (2014) asserted that authentic leadership is a positive, genuine, transparent, and ethical form of leadership. A leader who attempts to offer relational transparency must share and accept other's inputs while disclosing personal motives and values. When successfully transparent, Wang et al. (2014) suggest that leaders stimulate values, which results in positive behaviors. The positive construct appears to create a sense of commitment that in turn, enhances the ability to explore change openly. In the face of project constraints and change-resistant processes, the ability to stimulate shared values on a transformational idea may prove critical to overall success.

According to Cheung, Yiu, and Lam (2013), communication in project work enables project members to express concerns, which fosters positive relationships. If communication is an element of relational transparency, the perspective on communication in project work shows potential to enhance team relationships, address concerns, and mitigate resistance to change. Reflective of Vogelgesang et al. (2013) description of communication transparency, Cheung et al. (2013) furthered that effective communication is a catalyst to understand others needs and challenges in the conduct of project work. Similarly, Lundy and Morin (2013) identified open communication as a necessary factor relative to reducing resistance to change in project work. Concluding that communication and social skills are crucial to facilitating change, Lundy, and Morin (2013) reflected the tenants of relational transparency. Such relational transparency through the means of communication may also reflect a sense of balanced processing as it relates to resistance to change in project work.

Balanced processing. According to Alavi and Gill (2017), the ability to consider diverse perspectives, free of personal bias, in the process of decision making depends upon balanced processing. Leaders in the fast-paced change environment of the globalized economy must make sound and timely decisions. According to Welsh, and Ordonez (2014), subconscious processes can influence decision making no matter the leader perspective. Given this innate bias tendency, balanced processing appears critical to a fair consideration of diverse perspectives. Wang et al. (2014) described balanced processing as an objective analysis of all relevant information before an individual makes a decision. Authentic leaders must openly link between diverse people and ideas, often separated by culture and workspace while making decisions of consequence. Gilstrap (2013) underscored the need for a balanced process by summarizing the chaotic nature of rapid change, which requires an inclusive approach to decision making.

Wong and Laschinger (2013), reinforced the decision-making perspective of Alavi and Gill (2017) while correlating balanced process with empowerment. The research of Wong and Laschinger (2013) further suggested that when leaders employ an inclusive approach characterized by balanced processing, then a sense of empowerment in the workplace results. A trusting environment of empowerment appears a meaningful way to convey authenticity. Ownership of work results much like ownership of change appears a component of an empowered workplace. Wong and Laschinger (2013) observed that balanced processing, when demonstrated through involvement, contributes to committed ownership of decisions, goals, and results.

Hinojosa, McCauley, Randolph-Seng, and Gardner (2014) observed that leaders who use balanced processing might consider the interest of the group even when those

interests' conflict with their own. This other's centric dimension of leading reflects the higher order value of selfless service. According to Huneke, and Pinel (2016), a selfless approach promotes a sense of validation and belonging throughout a workgroup. Considering the challenges of resistance to change, the effects of selflessness generated through balanced processing could influence the grounding in traditions that resistance to change often generates. Fuchs and Prouska (2014) observed that positive support generates a change schema that mitigates perceptual distortions responsible for resistance to change. As leaders employ balanced processing, it appears that an ethical sense of clarity emerges from the selfless approach.

A balanced selfless approach to leading requires a leader to reflect and adjust situationally. Meng et al. (2016) referred to the selfless approach to authentic leadership as a balanced treatment. Balanced treatment appears the result of a leader's balanced processing abilities. Authentic leaders who exercise balanced processing seem more likely to employ the kind of balanced treatment that seeks out feedback from others. Systematically, balanced processing may create a reflective feedback loop that integrates others interests into how a leader treats a change situation. Fuchs and Prouska (2014) observed that it is essential to create a positive perception through ethical treatment to move a change initiative forward. Balanced processing presents a means to operationalize the kind of ethical thoughts, behaviors, and values that foster a definite affinity for overcoming resistance to change.

Wong and Laschinger (2013) observed that leaders with sound insight into core values are unafraid to explore other's opinions before making decisions. Furthering the balanced processing construct, Wong and Laschinger (2013) asserted that involving

others in decisions invited increased ownership in shared goals. Ethical grounding appears the fulcrum of balanced processing. As project leaders ethically use balanced processing, the resulting balanced treatment may enhance empowerment, trust, and ownership; key elements that appear to combat resistance to change in individuals and teams.

Pandya (2014) suggested that beyond the technical capabilities of a project manager, key competencies such as balanced processing, are essential to project-based work. The ability to use balanced processing contributes to a sense of fair treatment that project managers may leverage when faced with resistance to change. Lundy and Morin (2013) cited leadership competencies that contribute to inclusion and collaboration as central to overcoming resistance to change. It appears that the balanced process of authentic leadership contributes to a project manager's ability to synthesize several perspectives while socializing commitment and workplace inclusion.

According to Boekhorst (2015), those who role model authentic leadership traits, such as balanced processing, communicate social information about the importance of inclusion. It seems that such behaviors institutionalize workplace inclusion because of their inherent ethical nature, which according to Boekhorst (2015), drives a genuine effort to consider the perspectives of others in the decision-making process. More than just weighing out pros and cons, the authentic project leader considers potential contradictions to a personal viewpoint or milestone objective. An effective leader must examine a change from all perspectives. The ethics of selfless consideration embedded in balanced processing appear to have relevant links to the internalized moral perspective of authentic leadership.

Internalized moral perspective. Meng et al. (2016) described internalized

perspective as the leader attribute that produces decisions based on high ethical standards,

rather than self-serving behaviors. This self-less perspective appears to relate to the trait

of self-awareness. Those leaders who approach decisions using internalized moral

perspective must exercise high ethical standards in a disciplined way. Datta (2015)

explained that self-regulation depends upon internal moral standards and values over

external pressures. It is the sense of high moral values that authentic leaders seek to

express in decisions and behaviors. Despite the pressures of expediency or political

agendas, even in the face of psychological states such as resistance to change, authentic

leaders seek to operate within certain internalized values. Alavi and Gill (2017) further

noted that finding a value system alignment between a change initiative and those

experiencing change was critical to overall success.

Fusco et al. (2016) observed that several high profile corporate scandals starting

in 2001 drove an increased interest in value based leading. The demand for open leaders

with a positive approach to ethical leading drove the demand for authentic leadership. It

appears that the consequences of unethical leading transformed the perceptions of how

sound leaders think and behave. To a more ethical end, internalized moral perspective is

foundational to authentic leadership. As Hinojosa et al. (2014) suggested, deeply rooted

values and a desire to make a difference form the baseline of internalized moral

perspective. More than values, the substance of internalized moral perspective is a form

of self-regulation bounded by higher order values of an ethical nature.

Datta (2015) observed that an internalized moral perspective involves self-

regulation while Hinojosa et al. (2014) added that deeply rooted values guide the self-

regulation. In contrast, Joosten, Dijke, Hiel, and Cremer (2014) studied self-regulation in unethical leadership behaviors and found that those leaders who are low in moral identity experience a kind self-regulatory depletion under stress that leads to unethical behaviors. It seems that significant identity with internalized moral perspective provides a safeguard against discrediting ethical compromise. The characteristic of internalized moral perspective appears to provide a mechanism of altruistic discipline.

Yeow and Martin (2013) described leader self-regulation as a competency which allows leaders to help themselves to reconcile differences between self and others. The reconciliation perspective is somewhat reflective of balanced processing as described by Alavi and Gill (2017), though the research team did not consider the elements of moral identity and ethics. Neubert, Wu, and Roberts (2013) considered both self-regulation and leader ethics and concluded that leaders who can communicate moral ideas while maintaining a connection with others contribute to a kind of regulated forces that may effectively voice improvements and changes over the status quo. The ethical regulation of an internalized moral perspective may well address the status quo seeking tendencies of resistance to change in project managers.

Marques (2013) studied ethics and leadership and asserted that organizational leaders should give attention to strengthening competencies such as self-awareness and self-regulation. Marques (2013) further observes that reaching beyond self, serving others, scrutinizing personal motives, and ensuring ethical performance are all important to effective leadership. The ethics of an internalized moral perspective reflect the same characteristics of a similar self-regulated others perspective. The internalized ethical

discipline of a leader may prove valuable to managing particularly in the temporary construct of project work.

Müller et al. (2013) studied ethics in temporary organizations as it related to governance and trust and showed that ethical vulnerability in project management might show critical leader implications that could influence decision making. The grounding of internalized moral perspective may provide a project manager with the focus and consistency to address ethical vulnerabilities such as a breach of trust. Whether an ethical breach is on a large scale such as the Enron case, or a more localized compromise of trust, such ethical breaches have an impact.

Müller et al. (2013) described the impact on trust when a moral compromise occurs, describing it as an ethical breakdown. Ethical breakdowns in trust could give rise to change-resistant behaviors such as a retreat to routines. In contrast, Xiong, Lin, Li, and Wang (2016) studied employee trust and the moderating effects of authentic leadership and showed that authentic leadership had a moderating effect on trust in organizations. Stander, de Beer, and Stander (2015) further asserted that authentic leadership promotes both optimism and trust. When leaders act against the moral standard they espouse, Xiong et al. (2016) summarized that such inauthentic behaviors result in mistrust. How internalized moral perspective of authentic leadership may reduce ethical vulnerabilities in project work may also overcome protective reactions such as mistrust and resistance to change.

The study conducted by Lundy and Morin (2013) showed that project leadership influences on resistance to change impact ethical behaviors. While Lundy and Morin (2013) did not specifically cite the internalized moral perspective of authentic leadership,

ethical conduct in the areas of leadership decision making showed important to project leadership. Additionally, Lundy and Morin, 2013 underscored the importance of trust. Trust stands as an exemplar of the impact that internalized moral perspective may have on leading projects and overcoming resistance to change in project work.

Taken together the four corners of the authentic leadership framework of self-awareness, relational transparency, balanced processing, and internalized moral perspective may influence leaders such as project managers. By creating positive attitudes, behaviors, and decisions, authentic leadership could contribute to change initiatives by overcoming the psychological distress of resistance to change. According to McKay et al. (2013), at the outset of change, uncertainty can become more stressful than the practical components of the change process. Those project managers who can mitigate the stress of uncertainty through positive leadership may effectively overcome the reactions of resistance to change which Di Fabio et al. (2014) described as, routine seeking, distress, and cognitive rigidity. Ultimately project managers must find the means to overcome the internal stress and strains of resistance to change to operate effectively in the project management domain.

Theme 4: Project management, managers, and professional certification. In the previous section, the discussion focused on authentic leadership, which manifests in self-awareness, relational-transparency, balanced processing, and internalized moral perspective. The discussion clarified the dynamics of authentic leadership as a positive approach to leadership. Authentic leadership appears to provide a means to address effectively leader challenges in today's globalized work environment, such as resistance to change in project work. For both the leader and the follower, authentic leadership

emerges as a means of collaboration, an open environment of ideas, and the kind of psychological safety needed to face changes and overcome the status quo. For project managers, this approach gives insight into how to address the pressures of time-bound work grounded in procedural project processes. While the workforce may be matrixed or transit, fixed project methods likely create a barrier to change. According to Chronéer and Backlund's (2015), many organizations today use a project-based orientation to operations. This study focused on a population of project managers who likely share common work practices, definitions, and routines.

According to Chen et al. (2014), the overall objective of project management is to increase awareness of project processes while increasing the likelihood of project success. Project managers must focus on process and milestones to manage scope and project fidelity while balancing soft leadership behaviors that generate positive ideas and promote innovation. It appears that the blend of between project work and leadership intent as reflected in Chronéer and Backlund's (2015) study is crucial to creating success in a project-based organization.

According to the Project Management Institute ("PMBOK®," 2017), a project is a temporary work with a clearly defined beginning and end, that creates a unique result. While the project activity is temporary, the result typically persists for a time. The building of a product such as software or a building, a planned change in organizational structure or staffing, or a service such as a customer call center processes are examples of project work. Given the temporal nature of project work, project managers regularly encounter changing work assignment, staffs, and priorities. The dynamics of projects often vary, which may increase complexity along with the reactions to change.

A project may involve a single individual, a team, or several organizational units. The Project Management Institute ("PMBOK®," 2017) described the ongoing work effort of project managers as a repetitive process in an environment of change. The institute further suggests that project managers must expect change and implement processes to keep the change under control. The perspective of change control provides insight into the mindset employed through project management techniques. While such an approach may provide tangible evidence of a change, such as a milestone fidelity chart, it does not address the human dimension of navigating resistance to change. According to Pandya (2014), project managers must deal with the rapid changes in the business environment, as well as behavioral and human issues in project-based organizations.

Chronéer and Backlund (2015) described project-based organizations like those in which much of the goods and services are a product of project management standards and processes. Varajão and Cruz-Cunha (2013) further stated that project management standards are essential building blocks in modern organizations. For both internal and external customers, projects driven organizations employ process work that sets and measures milestones in a disciplined way. In the globalized economy where speed to market is essential to competitive advantage, an emphasis on milestone management appears to characterize many organizations as project-based in nature. Chronéer and Backlund (2015) observed that in such organizations it is essential to take a holistic view to the interrelationships between project work and managerial strategies.

Szabo (2016) asserted that the culture of projects had spread rapidly in the last few years. Terms such as management, methods, milestones, and schedule fidelity dominate the language of the project management culture. Within the profession of

project management, the great emphasis on management techniques over soft skills such as the psychology of leadership appears an area in need of further study. The emphasis on procedural processes and techniques may not provide a project manager with the insight needed to address rapid change and the corresponding resistance to change that generates from the uncertainty of traditional work practices. A distinction between project management and project leadership may shed light upon the need to understand the relationship between authentic leadership and resistance to change in project work.

   Leadership and projects. According to Anca (2014), leaders are influencing agents of change in organizations while projects are a sequence of activities designed for generating well-defined results. Many researchers describe the critical distinctions between leading and managing. In contrast, the project domain appears to emphasize management over leadership. According to Lau et al. (2013), it is important to distinguish between the focus of planning, budgeting and service delivery of management and the empowering, motivating, and visionary approach to practicing change through leadership. While both are parallel constructs, the distinctions present a challenge to a project manager who may focus on management without due consideration for the impact of leadership. In contrast, the Project Management Institute ("PMBOK®," 2017) describes leadership as an interpersonal skill that a project manager often uses.

   It does appear that the Project Management Body of Knowledge ("PMBOK®," 2017) guide reflects the importance of leadership during the critical beginning phase of a project when the emphasis on communicating, motivating, and promoting a vision is crucial. This early stage emphasis on leadership parallels the unfreezing phase of change management as described by several (Kotter, 1995; Lewin, 1947; Schein, 1996).

Similarly, project managers often partition projects into lifecycle phases. Cagliano, Grimaldi, and Rafele (2015) described the phases of conceptualization, planning, execution, and terminations, while other project models list initiating, planning, executing, closing, and monitor and control phases. Leadership throughout the project management lifecycle may provide a performance advantage.

Ssegawa (2015) observed that the uniqueness of the project environment called for an understanding of three project leadership domains that include self-leadership, project task leadership, and leadership of the project situation. Ssegawa (2015) listed self-awareness, and self-management as crucial to the self-leadership domain. Reflective of the self-awareness competency of authentic leadership and the self-regulation of an internalized moral perspective, authentic leadership tenants appear consistent with the findings of Ssegawa (2015) who concluded that project leaders must acquire leadership capabilities to execute effectively. Authentic leadership could provide not only the means to effectively execute projects, but they may also show the potential to overcome the psychological state of resistance to change in project managers.

Project management and resistance to change. According to Lundy and Morin (2013), resistance to change often leads to failure in project work. As the rate of change has increased in project-based globalized organizations, it follows that resistance to change has increased correspondingly. To mitigate the resistance to change leaders must seek out means to manage resistance to change. Ozorhon, Abbott, and Aouad (2014) observed that resistance to change was a significant yet predictable barrier that called for effective project leadership to safeguard the project activity from failure.

Packendorff et al. (2014) observed that project leaders often met resistance when trying to implement change because of the tendency to preserve routine actions and the desire to transfer responsibility. Reflective of resistance to change behaviors such as maintaining the status quo through routine seeking behaviors, such tendencies may create project delays or even failure. To overcome project challenges and delay, project managers may resort to standardized milestones or status quo project management techniques to meet expectations. While logical from a project management perspective, such actions may reinforce resistance to change rather than overcome it. To break through the status quo of traditional project management techniques, Ssegawa (2015) prescribed a focus on the leadership domain.

Lundy and Morin concluded that an engaging project leadership style is the most effective for reducing resistance to change. Citing factors such as empowerment, self-awareness, interpersonal sensitivity, and conscientiousness, Lundy, and Morin (2013) demonstrated the importance of crucial leader traits with managing resistance to change in project work. Given the pressures of milestones, schedules, and established procedures of project management, overcoming resistance to change in projects presents substantial organizational obstacles. As Jost (2015) suggested, in the workforce, there are pressures towards consistency in both cognitive and motivational systems that resist change. Project Management appears a discipline of process consistency, so much so that individuals and organizations often turn to professional certifications to validate and reinforce consistent project management abilities.

Project management certification. Many project-based organizations seek to enhance organizational efficiency and effectiveness through certifications such as the

Project Management Institute's (PMI) Project Management Professional (PMP®)

certification. According to the PMI ("PMI Fact File," 2017), there are 484,524 PMI

members in good standing, 761,905 PMP® certified project managers and another 33,383

managers with a certified associate in project management worldwide. According to

Zadeh, Dehghan, Ruwanpur, and Jergeas (2016), the International Project Management

Association (IPMA), a global organization representing a federation of more than fifty

project management associations, also provides professional certifications for project

managers. Alarmingly Ramazani and Jergeas (2015) reported that while the expense

devoted to certifications and project methods are significant, there is little evidence that

the expense translates into practical results.

Ramazani and Jergeas (2015) observed that there is tremendous growth in

attention to knowledge-based certifications such as the Project Management Institute's

PMP® while demonstrating that future project manages should focus on critical thinking,

interpersonal skills, and leadership over technical management skills. Patah and Carvalho

(2016) concluded that PMP® certification provided a positive influence on project

methodology but did not address how the certification might influence resistance to

change. The foundational skills and knowledge represented by PMP® certification appear

to provide a project manager with professional credibility and process consistency.

Starkweather and Stevenson (2011) researched PMP® certification as a core

competency for project managers and found that there were no project success

differences between PMP® certified and non-certified project managers. The study

(Starkweather & Stevenson, 2011) further reveal that the competency of PMP®

certification was the least valued by surveyed IT executives at 15.4% while rating

leadership as most valued at 94.8% among 15 project management competencies. Starkweather and Stevenson (2011) also included the competency of a project manager's ability to deal with ambiguity and change and found that the competency rated sixth among the 15 competencies with a score of 93%. The ability of a project manager to think like a leader and manage change appears important over the impact of professional certifications.

In 2017, the Project Management Institute published the sixth edition of the Guide to the Project Management Body of Knowledge ("PMBOK®," 2017), which documents the knowledge, skills, and techniques meant to enhance the chances of success over many projects. The PMBOK® guide along with Project Management Institute code of ethics serve as the baseline intelligence for certification tests. The PMBOK® guide describes a project with five process groups that encompass 47 project management processes. Matrixed together the process groups and processes create a prescriptive framework for project management work. The five groups include initiating, planning, executing, monitor and controlling, and closing. Initiating defines a new project, planning establishes a course of action, executing is satisfying the project specification, monitoring and controlling is regulating progress and outputs, and closing finalizes the project results. Often, project managers view the process groups as phase gates in a linear progression of milestones from project start to completion.

A comparison of the PMI - PMP® process groups with the change management structures of Kotter (2007) Schein (1996) and Lewin (1951), show emergent parallel themes.

Table 4.

Process and Change Management

Theorist	Phase 1: Introduction	Phase 2: Change	Phase 3: Stabilize
Lewin	Unfreeze	Change	Refreeze
Schein	Sense Change Gather Information	Draw Conclusions Make Changes Develop Actions	Feedback
Kotter	Sense of Urgency Guiding Collation Create a Vision	Empower Others Short-Term Wins Consolidate	Institutionalize
PMI Process Groups	Initiating Planning	Executing	Monitor and Control Closing

A parallel construct emerges from the comparison between change management and project management. In both cases, a formulary approach to management presents a construct with a set of knowns. In the case of resistance to change the situational unknowns provoke resistance to change. Hornstein (2014) concluded that the integration of project management and organizational change management is now a necessity. The questions related to the utility of formal project management methodologies evidenced by certifications merit further study. The research evidence shows that the constructs of change management and project management are merging disciplines. Leadership must now weigh in the balance with management to unfreeze the effects of resistance to change. If the condition of PMP® certification moderates the relationship between authentic leadership and resistance to change, new insights into the PMP® certification as an instrument of success and leadership acumen may emerge through this study. Further, clarity relative to the value of professional project management certifications concerning leadership, project manager development, and overcoming resistance to change in project managers may result from this investigation.

Methodology selection. This study used a quantitative approach to establish if, and to what degree there may be a relationship between authentic leadership characteristics and resistance to change. In contrast, Lundy and Morin (2013) used qualitative methods to study project leadership and resistance to change using Dulewicz and Higgs'(2005) transformational leadership framework, which resulted in a recommendation of further research relative to resistance to change using other mainstream leader models. Using a case study design allowed Lundy and Morin (2013) to explore the subjective reality of the project work as perceived by those interviewed. Further, Lundy and Morin (2013) conducted semi-structured interviews with 16 interviewees allowing for limited measurement of specific indicators such as project leadership, resistance to change, and impacts of change. The use of quantitative methods in the present study extends the analysis of leadership and resistance to change in a more objective, specific, and measured way.

The purpose of quantitative methods is to measure the relationship between variables. In this case, measuring the strength of authentic leadership with resistance to change, showed quantifiable insight over previous descriptive qualitative research such as Lundy, and Morin's (2013) study. According to Wener, and Woodgate (2013), qualitative studies are primarily descriptive. The qualitative approach would not measure the strength of the relationships, which is central to this research. This study may fill a research gap while addressing the limitations described by Lundy, and Morin's (2013) qualitative research on leadership and resistance to change.

Methodologies used in related studies. The body of knowledge related to authentic leadership shows several quantitative benchmarks. Peus et al. (2012) used

quantitative methods to conduct an empirical test of authentic leadership antecedents, consequences, and mediating mechanisms. Wang et al. (2014) similarly used quantitative methods to examine authentic leadership in the role of influencing follower relational processes. Comparably, Beal et al. (2013) used quantitative methods to examine the effects of psychological capital and resistance to change in relationship with organizational citizenship behaviors. The use of quantitative methods in this study allowed the full use of measurement instruments such as the Authentic Leadership Questionnaire (Walumbwa et al., 2008), and Oreg's (2003) Resistance to Change scale.

Privitera (2013) described the quantitative method as most preferred when the aim is to determine a relationship between two variables. Gardner, Cogliser, Davis, and Dickens (2011) conducted a comprehensive literature view of the authentic leadership theory and showed that there was a relatively high percentage of quantitative authentic leadership studies consistent with its status in the first stage of development. Privitera (2013) described a trending preference in research for quantitative methods early in the development of a theory. Fusco et al. (2016) furthered that authentic leadership is in relative infancy, which calls for the quantitative method. The instrumentation used in related studies shows effective quantitative measures for authentic leadership as well as resistance to change.

Instrumentation. Previous studies centered on authentic leadership correlated with various variables such as follower performance, leader-member exchange, trust, and psychological safety. Gardner et al. (2011) reviewed 91 publications that focused on authentic leadership and further reported that there were at least several hundred more

ongoing research studies in work based on requests for the Authentic Leadership

Questionnaires. It appears that two instruments dominate authentic leadership measures.

Valid measures of authentic leadership include the Authentic Leadership

Inventory (Neider, & Schriesheim, 2011) and the Authentic Leadership Questionnaire.

The authentic leadership inventory contains four leadership dimensions that are the same

as the Authentic Leadership Questionnaire; self-awareness, relational transparency,

internalized moral perspective, and balanced processing. The respective research teams

tested both the ALQ and the ALI by employing comprehensive grounded studies.

The Authentic Leadership Inventory is a 16-item survey using a 5-point Likert

scale. Neider and Schriesheim (2011) demonstrated the validity and reliably of the

instrument using three samples to demonstrate consistency and factor structure. The

authentic leadership inventory showed alpha coefficients as low of .74 and as high of .85

across the four trait dimensions. The Authentic Leadership Questionnaire is a 16-item

survey using a 5-point Likert Scale. Walumbwa et al. (2008) tested the theory-based

measure of the Authentic Leadership Questionnaire using five separate samples dispersed

across China, Kenya, and the United States. The results of the tests showed the following

internal alpha coefficients for each scale, self-awareness .73, relational transparency .77,

balanced processing .70 and internalized moral perspective .73. This study used the

Authentic Leadership Questionnaire given the availability of the survey and the robust

testing of the instrument across five separate samples.

Walumbwa et al. (2008) used a one-factor model to explain the 16 items

contained in the Authentic Leadership Questionnaire using the structure of the four

correlated factors. Walumbwa et al. (2008) stated that a second order model explained the

four factors and adjusted the model. Cervo, Monico, dos Santos, Hutz, and Pais (2016) described the thorough testing and consistent results of the psychometric structure of the Authentic Leadership Questionnaire. This study employed Oreg's (2003) Resistance to Change Scale to measure the psychological state of resistance to change in a national population of project managers.

According to Oreg (2003), the Resistance to Change Scale measures the dispositional inclination to resist changes. The instrument contains four reliable factors including routine seeking, emotional reaction to imposed change, cognitive rigidity, and short-term focus. Oreg (2003) employed a series of seven studies to demonstrate the predictive validities of the scale. The researcher validated the first study on two additional samples, studies 3 and 4 established convergent and discriminate validities, and studies 5 through 7 showed concurrent and predictive validities.

The instrument contains 17 items, five items support the factor of routine seeking, and four items support emotional reaction, short-term focus, and cognitive rigidity respectively. The instrument calls for the use of a six-point Likert scale, which range from 1 (strongly disagree) to 6 (strongly agree). Oreg (2003) did not design the scale to address any specific type of change, providing utility beyond a contextual cause.

During the instrument validation process, Oreg (2003) stated that resistance to change alpha coefficients were: .88 for the total resistance-to-change score and.82 for routine seeking, .78 for emotional reaction, .78 for short-term focus, and .82 for cognitive rigidity. In 2008, Oreg et al. studied dispositional resistance to change across 17 nations and demonstrated a coefficient alpha of .70 or above with a mean alpha of .80 and coefficients ranging from .72 to .85. The comprehensive testing of the Resistance to

Change Scale suggests an instrument with sound reliability. For this study, Oreg's (2003) Resistance to Change Scale measured the overall disposition of resistance to change in project managers.

Summary

A critical gap in research literature exists regarding authentic leadership behavioral effects on the psychological state of resistance to change in project managers. Lundy and Morin (2013) found that an engaging transformational leadership style was instrumental in reducing resistance to change but were confounded by the effects of other leadership styles. They recommended further research on a larger sample in different industries should be undertaken to verify the findings on leadership influences on resistance to change and to provide clarity on this problem. Bakari et al. (2017) further cited resistance to change as an "important factor" (p. 175), concluding that future research should investigate the role of authentic leadership in the development of change related behaviors.

Pressures such as time and schedules often require organizations to accelerate change to meet the demands of the global market. Leadership behaviors used in response to such pressure influence organizational effectiveness. Those leaders who employ authentic leadership behaviors potentially could most effectively adapt and manage in a changing environment. According to Wang et al. (2014), the positive approach characterized by authentic leadership provides a positive disposition to help meet changing organizational challenges. Overcoming resistance to change in self and others appear vital to effective project management.

This review of literature addressed resistance to change characterizing it as a significant barrier to organizational success in the globalized market space. As the rate of change has accelerated over time, resistance has become a continuous challenge to leaders such as project managers, both personally, and as a workforce phenomenon. Project managers must be self-aware of their change responses and how they affect others. Additionally, mitigating resistance to change is a key leader task that project managers' attend to on a regular basis. Many organizational leaders employ change management models to address resistance to change with varying success.

Change management models appear as steps or phases much like project or process models. Kuipers et al. (2014) summarized that change management theory emphasizes the process of change in a prescribed manner yet lack contextual considerations. Under such step-by-step processes, change becomes exceptionally procedural. While change management processes appear important, Mehta et al. (2014) found that a change initiative success depends on both task-oriented, and people-oriented behaviors. To address the people-oriented perspective of project managers the positive psychology of authentic leadership presents effective behaviors that could influence the psychological state of resistance to change.

According to Wang et al. (2014), the essence of authentic leadership includes the four leader traits of self-awareness, relational transparency, balanced processing, and internalized moral perspective. Datta (2015) defined self-awareness as to how a person makes meaning of the world and how that meaning impacts self-perceptions. An efficacious understanding one's strengths and weaknesses relative to how a person may influence others shows self-awareness. It appears that this deep understanding of self

allows a leader to relate confidently to others in a transparent way. Self-awareness of resistance to change tendencies may enhance a project manager's ability to accept change, and further project a favorable disposition for change.

Opatokun et al. (2013) observed that relational transparency is the process of self-disclosure while developing common understandings with others. How well a leader develops relationships may dictate the level of trust and openness in the environment. This form of relationship appears to rely on mutual accountabilities, which according to Wang et al. (2014), leads to positive social exchanges. The positive social exchange perspective could reflect a tolerant environment of psychological safety, which Nienaber et al. (2015) described as a climate of acceptance and mutual respect.

According to Alavi and Gill (2017), the ability to consider diverse perspectives, free of personal bias, in the process of decision making depends upon balanced processing. Leaders in the fast-paced change environment of the globalized economy must make sound and timely decisions. According to Welsh, and Ordonez (2014), subconscious processes can influence decision making no matter the leader perspective. Given this innate bias tendency, balanced processing appears critical to an ethical consideration of diverse perspectives and feedback loops characteristic of an internalized moral perspective.

Meng et al. (2016) described internalized moral perspective as the leader trait that produces decisions based on high ethical standards, rather than self-serving behaviors. This self-less perspective appears to reflect the trait of self-awareness. Those leaders who approach decisions and dilemmas using internalized moral perspective must exercise self-discipline against high ethical standards. Datta (2015) explained that self-regulation

depends upon internal moral standards and values over external pressures. It is the sense of high moral values that authentic leaders seek to express in decisions and behaviors. How the soft skill competencies of authentic leadership apply in project management cultures may provide insight into how project managers may overcome the alarming state of resistance to change.

Authentic leadership appears to provide a means to address effectively leader challenges in today's globalized work environment, such as resistance to change in project managers. For both the leader and the follower, authentic leadership emerges as a means to collaboration, an open environment of ideas, and the kind of psychological safety needed to face changes and push aside the status quo. For project managers, this approach gives insight into how to address the internal pressures of time-bound work grounded in procedural processes that are characteristic of project management cultures while enhancing organizational commitment through positive means.

Studying the practice of authentic leadership and resistance to change as recommended by Bakari et al. (2017) extended the leadership body of knowledge, which is crucial to organizational effectiveness in the global market. While past studies have demonstrated the effectiveness of various leadership styles, leading change in the global market requires innovative approaches. As described by Akbari, Amiri Imani, Rezaeei and Forudi (2017) leadership style matters especially when implementing change. Extending the scholarly literature of leading change in a complex environment driven by project management methods is significant to the effectiveness of organizational leaders and ultimately organizational success.

Many project-based organizations seek to enhance organizational success through project management certifications. In contrast, Ramazani and Jergeas (2015) reported that while the expense devoted to certifications and project methods are significant, there is little evidence that the expense translates into practical results. Ramazani and Jergeas (2015) further observed that future project manages should focus on critical thinking, interpersonal skills, and leadership over technical management skills. Alternately, Lundy and Morin (2013) asserted that formal project management methodologies and leadership are instrumental in reducing resistance to change. The foundational project management methods represented by technical certifications such as PMP® may provide a project manager with professional credibility, but further evidence of the certifications moderating effects between authentic leadership and resistance to change could reinforce the extant assertions.

The scholarly value of researching authentic leadership in the context of resistance to change appears essential to the body of knowledge. Finding valid authoritative means for committed project managers to overcome resistance to change through the positive capacities of authentic leadership has value to both the body of knowledge and the practice of organizational leadership. The furtherance of past research provides relevance for project management practitioners. Understanding how authentic leadership influences resistance to change in project managers has emerged as a significant organizational challenge. The scholarly value of further research of authentic leadership in relation to resistance to change cannot be underestimated.

The next chapter presents the methodology proposed to examine the hypothesis. Chapter three describes the problem, research questions, methodology, and design in

detail. In this study, both the ALQ and the RCS measured the variables within the chosen

methodology.

Chapter 3: Methodology

Introduction

Resistance to change has long challenged project managers who must accept, conceptualize, plan, and implement change across a variety of organizational situations. García-Cabrera and García-Barba Hernández (2014) observed that while resistance to change has concerned researchers for decades, it is now crucial to understanding the state of resistance to change. In today's world of project-based work, resistance to change appears a significant obstacle to project managers and ultimately effective organizational outcomes. Lundy and Morin (2013) asserted that project leadership influences resistance to change in a significant way. Lloyd-Walker and Walker (2011) advanced the framework of authentic leadership to address the needs of successful project management through leadership in the 21st century. An understanding of how such leadership influences resistance to change may bring new insight into the organizational role of project managers.

The nature of a project manager's work is to receive change concepts and methodically operationalize a plan that delivers new goods, services, or processes to market in a productive manner. Given the nature of the work, it is understandable that resistance to change represents a central obstacle that project managers must breach to propel an environment of positive productivity. Many organizations require project professionals achieve PMP® certification to increase positive project productivity. The certification relies on a procedural formulary to managing projects in a methodical way. According to Lundqvist and Marcusson (2014), it is vital that project managers lead

projects according to the kind connected and coherent activities that the PMP®
certification fosters.

This study quantitatively determined to what extent, if any, a relationship exists
between authentic leadership and resistance to change for PMP® certified and non-PMP®
certified project managers, and whether PMP® certification may serve as a moderator.
Examining authentic leadership, which Walumbwa et al. (2008) described as a pattern of
leadership behaviors that draw upon positive psychological capacities to foster greater
self-awareness, an internalized moral perspective, balanced processing and relational
transparency in relationship to - resistance to change – which Oreg (2003) described as
the dispositional inclination that results in routine seeking, emotional reaction to imposed
change, cognitive rigidity, and short-term focus, provided new insight into the project
management domain. The purpose of this quantitative correlational research is to
determine what, if any, relationship exists between authentic leadership and resistance to
change within a sample of project managers in the United States and whether PMP®
certification significantly moderates the relationship between these two constructs.

Wang et al. (2014) recognized authentic leadership as a positive, transparent, and
ethical form of leadership that can help meet today's organizational challenges. The
researchers further suggested that organizations may gain from developing their
managers following the principles of authentic leadership. How the authentic leadership
may influence resistance to change in project-intensive environments may show a
practical path toward efficient progress in the domain of leadership as it relates to project
managers.

Statement of the Problem

It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Given that change is a persistent process in organization's today, Nixon (2014) explained that mitigating resistance is a continuous leadership challenge. Finding the optimum leadership approach requires examination of new leadership constructs. Fusco et al. (2016) asserted that authentic leadership is in the emergent stages of development, which presented a clear opportunity for further study. As the authentic leadership model matures, studies on its relationship to resistance to change will further the body knowledge. Lundy and Morin (2013) demonstrated that as transformational leadership behaviors increase in project manager's resistance to change decreases. While the literature shows a negative relationship between transformational leadership and resistance to change (Lundy & Morin, 2013; Penava & Šehic, 2014; Tonkin, 2013), how the authentic leadership behaviors may relate resistance to change remains unclear.

The project manager's role is now more critical than ever to organizational success. Chronéer and Backlund (2015) characterized many modern companies as project-based organizations. In such environments, organizations produce services, goods, and processes through project work. Koskinen (2012) reported that to achieve competitive success a project approach to work life is increasingly important. More importantly, Lundy and Morin (2013) found that project leadership has a substantive impact on resistance to change which may influence project outcomes. Many project

managers turn to professional education and certifications to impact successful project outcomes.

Those people charged with project leadership spend their work life at the epicenter of organizational success. So much so that the U. S. Government recently passed the program management improvement and accountability act ("S.1550," 2015) to enhance successful project management operations across U.S. governmental agencies. As a population, little is known about how authentic leadership traits relate to reducing resistance to change, or the practical utility of PMP® certification in project-based environments where project managers toil for success.

Research Questions and Hypotheses

This research examined if a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. The predictor variables in this study were authentic leadership and its multidimensional components of leader self-awareness, relational transparency, internalized moral perspective, and balanced processing, as measured by the ALQ (Walumbwa et al., 2008). The criterion variable in this study was resistance to change, a tendency or reaction to avoid, suppress, and devalue the positive possibilities of change. The moderating variable in this study was PMP® certification, a professional certification of project managers offered through the PMI. The PMI tests candidates against published Project Management Body of Knowledge. The conceptual and operational definitions of each variable, as well as the unit of measure further support the research questions and hypothesis.

Walumbwa et al. (2008) provided a conceptual definition of authentic leadership as a higher order construct of ethical leadership that is composed of four factors that include self-awareness, relational transparency, internalized moral perspective, and balanced processing. Datta (2015) observed that researchers frequently measure authentic leadership using the ALQ, which Walumbwa et al. (2008) operationalized and validated. An ordinal five-point Likert scale formed the unit of measure for the ALQ. Oreg (2003) conceptually defined resistance to change as a higher order resistive disposition characterized by the four factors of routine seeking, emotional reaction to imposed change, short-term focus, and cognitive rigidity. Oreg (2003) produced a means to operationalize resistance to change through the RCS, which uses an ordinal six-point Likert scale ranging from 1 (strongly disagree), to 6 (strongly agree) as a unit of measure. The moderating variable of PMP® certification may be conceptually defined as a tested professional credential that is based upon the PMI Project Management Body of Knowledge ("PMBOK®," 2017). For this study, PMP® certification was operationalized using a yes or no interval survey question.

The first research question: To what extent, if any, does authentic leadership predict resistance to change, directly supported the problem statement, which is that it was not known if or to what extent a relationship exists between authentic leadership and resistance to change. The first question examines the higher order construct of authentic leadership in relationship to resistance to change. The second research question: Do each of the four authentic leadership components significantly predict resistance to change, further supported the problem statement. The second question calls for a discrete examination of the four authentic leadership dimensions of self-awareness, relational

transparency, internalized moral perspective and balanced processing in relationship to resistance to change. The third research question: To what extent, if any, does certification serve as a moderator for authentic leadership and resistance to change provided a practical organizational dimension to the investigation. Together the three questions addressed the stated problem thoroughly: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change.

Predictor Variable 1: Authentic leadership – interval

Predictor Variable 2: Self-awareness – interval

Predictor Variable 3: Relational transparency – interval

Predictor Variable 4: Internalized moral perspective – interval

Predictor Variable 5: Balanced processing – interval

Moderator Variable: PMP® certification - dichotomous

Criterion Variable: Resistance to change – interval

RQ1. To what extent, if any, does authentic leadership predict resistance to change?

H_{01}: There is no statistically significant relationship between authentic leadership and resistance to change.

H_{1a}: There is a statistically significant negative relationship between authentic leadership and resistance to change.

RQ2: Do each of the four authentic leadership components significantly predict resistance to change?

H_{02}: There is no statistically significant relationship between self-awareness and resistance to change.

H_{2a}: There is a statistically significant negative relationship between self-
awareness and resistance to change.

H_{03}: There is no statistically significant relationship between relational
transparency and resistance to change.

H_{3a}: There is a statistically significant negative relationship between relational
transparency and resistance to change.

H_{04}: There is no statistically significant relationship between internalize moral
perspective and resistance to change.

H_{4a}: There is a statistically significant negative relationship between internalized
moral perspective and resistance to change.

H_{05}: There is no statistically significant relationship between balanced processing
and resistance to change.

H_{5a}: That there is a statistically significant negative relationship between balanced
processing and resistance to change.

RQ3: To what extent, if any, does PMP® certification serve as a moderator for
authentic leadership and resistance to change?

H_{06}: PMP® certification does not serve as a statistically significant moderator for
authentic leadership and resistance to change.

H_{6a}: PMP® certification serves as a statistically significant moderator for
authentic leadership and resistance to change.

Researchers have yet to explain Luthans and Avolio's (2003) seminal theory of
authentic leadership in relationship to resistance to change. The recent dominance of
project management as a construct to effect change in organizations inspired this study of

authentic leadership in relationship to resistance to change. Hornstein (2014) concluded that the interaction of project management and change management is a necessity for project leaders. The potential that authentic leadership behaviors may have to ameliorate resistance to change serves as the basis of the research questions. How PMP® certification may moderate the relationship between authentic leadership and resistance to change in project managers enhanced the findings of this study from a surveyed population of project managers nationally. Qualtrics LLC deployed a survey to project managers in search of answers to the research questions.

Through electronic survey means, demographic data as well as data from the Authentic Leadership Questionnaire survey instrument (Walumbwa et al., 2008), and the Resistance to Change Scale (Oreg, 2003) provided the substantive intelligence for this study. The demographic data included information for PMP® certification, gender, ethnicity, years of experience and education level. The demographic data is interval in nature with the exceptions of gender and PMP® certification. The demographic questions sought to characterize the sample under study.

Research Methodology

This study used the quantitative methodology to establish if, and to what degree there may be a relationship between authentic leadership behaviors and the psychological state of resistance to change in project managers. Privitera (2013) observed that the objective of such quantitative research aims to harvest realistic measurements. This study seeks to measure objectively the potential relationships between authentic leadership and resistance to change. Beyond measures, Field (2013) furthered that quantitative research should exhibit reproducibility characteristics. The ability for another researcher to

replicate processes and results provide integrity to quantitative methods. By using standardized ALQ and RCS instruments, this study demonstrated a high degree of reproducible integrity.

This research quantitatively measured the variables using instruments with proven validity and reliability. When researchers seek to establish relationships, Privitera (2013) recommended quantitative methodology. To optimize the methodology and further the goal of this research highly reliable survey instruments quantified the relationships, if any, between authentic leadership and resistance to change. Walumbwa et al. (2008) asserted that structural equation modeling demonstrated the predictive validity of the ALQ, while Oreg (2003) described the validity of the RCS and its utility to account for resistance to change and to predict reactions to specific change through an exhaustive grounded research study.

Online surveys gathered data for this study, which presented two validated survey instruments. First, the ALQ (Walumbwa et al., 2008) provided authentic leadership measures from project manager responses to the survey. Oreg's (2003) RCS measured resistance to change. Both instruments by design collect ordinal data, which provided substance to the quantitative analysis. The use of quantitative methods allowed the full use of measurement instruments. The quantitative data produced from the two instruments gave substance to an examination of the predictive authentic leadership variables in relationship to the criterion variable of resistance to change in project managers.

A qualitative method would not serve the objectives of this study given that qualitative research focuses on more subjective data coding. Lundy and Morin (2013)

used qualitative methods to study project leadership and resistance to change using Dulewicz and Higgs' (2005) transformational leadership framework, which resulted in a recommendation of further research relative to resistance to change using other mainstream leader models. Using a case study design allowed Lundy and Morin (2013) to explore the subjective reality of the project work as perceived by those interviewed. The researchers used semi-structured interviews with 16 interviewees (Lundy, & Morin, 2013), which allowed for limited measurement and coding of specific indicators such as project leadership, resistance to change, and impacts of change. In contrast, the use of the quantitative methodology in the present study extended the analysis of leadership and resistance to change in a more specific, objective, and measured way.

The body of knowledge related to authentic leadership shows several quantitative benchmarks. Peus et al. (2012) used quantitative methods to conduct an empirical test of authentic leadership antecedents, consequences, and mediating mechanisms. Wang et al. (2014) similarly used quantitative methods to examine authentic leadership in the role of influencing follower relational processes. Scheepers and Elstob (2016) additionally used quantitative methods to study if beneficiary contacts moderate the relationship between authentic leadership and engagement. The researchers in the three examples used the ALQ in the pursuit of their respective studies.

The quantitative methods objectively measured the relationship between variables. In this case, measuring the strength of authentic leadership with resistance to change provided measured insight over previous descriptive research such as Lundy and Morin's (2013) qualitative study. Per Wener, and Woodgate (2013), qualitative studies are primarily descriptive. The qualitative approach would not measure the strength of the

relationships between the variables which is central to this research. This study may fill a gap in leadership research while addressing the limitations described in Lundy and Morin's (2013) qualitative research on project management, leadership, and resistance to change.

Research Design

This study used a quantitative correlational design to determine if there is a relationship between variables. According to Puth et al. (2015), correlation designs test relationships among interval variables. Only non-experimental designs were considered for this study as the experimental treatment effects of groups is not central to the research. Given that a causal-comparative design determines the causes of differences rather than establishing the relationships between variables, the correlation design appeared the best fit given the relational nature of the study. As summarized by Zachariadis et al. (2013), the focus of a correlational study is to measure bivariate variables to discover relationships.

The correlative design established if and to what extent, if any, a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. This study utilized a moderator variable. According to the seminal work of Baron and Kenny (1986), a moderator is a variable that affects the direction and strength of the relationship between independent and the dependent variables. The use of a correlational design shows the best means to understand the relationships between the variables. Equivalently, other researchers employed correlational designs for comparable studies.

Wang et al. (2014) studied the impact of authentic leadership on performance using a correlative design to study the variables of positive authentic leadership psychology and leader-member exchange (LMX). The resulting high correlation between LMX and authentic leadership exemplified the utility of the design. Comparably, Malik and Masood (2015) studied the bivariate dyads of emotional intelligence and resistance to change with a similar correlation design with a population of employees of the Telecom sector in Pakistan.

Research question one contains one predictor and one criterion variable. Authentic leadership as measured by the ALQ serves as the predictor variable, resistance to change as measured by the RCS represents the criterion variable. The second research question contains the four predictor variables of self-awareness, relational transparency, internalized moral perspective, and balanced processing juxtaposed against the criterion variable of resistance to change. Research question three contains two predictor variables and one criterion variable. A national sample of project managers served as the study population. Linear regression techniques modeled the predictor variables to the criterion variables. The regression testing examined the variables beyond a basic correlation so that the value of authentic leadership predicts the value of resistance to change. According to Wiedermann, Hagmann, and von Eye (2015), correlational and linear regression analysis are the most common statistical procedures for demonstrating relationships between two variables. When research call for the examination of more than two variables, multiple regression analysis is an appropriate testing means. Multiple regression determined the overall fit of the leadership model and the relative contribution of each of the four authentic leadership factors. In this study, multiple regression analysis

explained how much of the variation in resistance to change might be explained by self-awareness, internalized moral perspective, relational transparency, and balanced processing in a sample of project managers.

The third research question calls for the examination of three predictor variables, one in the form of a dichotomous moderator. Authentic leadership as measured by the ALQ served as the predictor variable, resistance to change as measured by the RCS represented the criterion variable, and PMP® certification as measured by a yes or no demographic question presented a moderating variable. Baron and Kenny (1986) described a moderator as a third variable that affects the zero-order correlation between two other variables. A moderator suggests that the relationship between two variable changes based on the influence of the moderator variable. Figure 3 shows the moderator model.
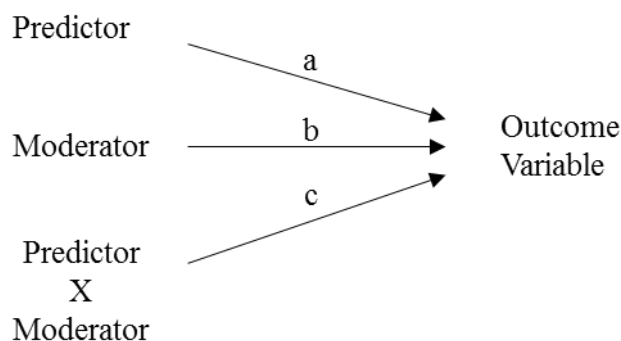
Figure 3. Baron and Kenny (1986) moderator model.

Figure 3 shows three causal paths that may feed into the dependent variable. Path a. shows the intensity of the predictor to the outcome. Path b. shows the impact of a moderator, and path c. illustrates the product of both a. and b. The model supports the moderator variable when path c. is significant. To examine the moderator variable, PMP® certification acted as an interaction term between the independent variable of authentic

leadership and the dependent variable resistance to change using standard multiple regression testing techniques on survey results from a national sample of project managers.

A national sample of project managers presented the preferred population base for this study. The results of multiple linear regression power analysis showed a minimum sample size of $N = 85$ (Appendix H) for this study. The total number of tested predictors in the model is four. The significance was set to $p < .05$ and power was set to .80. The effect size was medium, $f2 = .15$. Results from the power analysis indicated that the linear multiple regress required a minimum sample size of $N = 85$.

Qualtrics LLC administered two survey instruments within one questionnaire. The instruments were used without modifications of any kind. First, the ALQ provided feedback on the four key leadership traits of self-awareness, relational transparency, balanced processing, and internalized moral perspective (Walumbwa et al., 2008). Researchers may request use permission of the ALQ, without charge, for non-commercial purposes (Walumbwa et al., 2008) at www.mindgarden.com. Second, Ogre's (Oreg, & Sverdlik, 2011; Oreg, 2003) RCS assesses dispositional change aversion. The RCS facilitated the examination of the resistance to change dependent variable. The RCS when used for non-commercial research and educational purposes does not require written permission (Oreg, 2003). Both survey instruments present standard questions with Likert scale responses.

Qualtrics LLC, a private research software company, based in Provo, Utah, presented the surveys to participants. The survey included a statement of consent (Appendix C) and the questionnaire (Appendix D, G and I). Survey participants

acknowledged reading and understanding the informed consent statement using a mouse click before viewing the survey questions. Those that declined the survey received a thank-you and then exited from the Qualtrics LLC site. The statement of consent briefed respondents about the purpose of the study on the opening page of the survey. Confidentiality statements reinforced the integrity of the study while assuring participants through informed consent. Participants received two weeks to respond to the survey.

According to Puth et al. (2015), correlation designs test relationship among interval or interval variables. If this study demonstrated a relationship between authentic leadership and resistance to change then more in-depth research, such as experimental research, could be justified to further the study findings. Privitera (2013) asserted that quantitative experimental research could demonstrate causality which would be a step beyond the intent of this study. The researcher considered only non-experimental designs for this study as the experimental treatment effects of groups are not central to the research, nor are descriptive treatments.

While qualitative descriptive research designs provide significant insight, such an approach appeared inappropriate for this study given that descriptive designs do not test hypotheses. The design analysis shows that a non-experimental design aimed at measuring a sample of volunteer project managers through survey means provides the goodness of fit for this study's purpose. Zachariadis et al. (2013) clarified that non-experimental quantitative designs meet the strategic intent of objectively observing variable relationships. The unit of analysis for this study was individual project managers in the United States.

Population and Sample Selection

This study focused on the population of project managers in the United States. The challenge of resistance to change in project managers drove the purpose of this study. Per Jost (2015) human beings consistently show a propensity for resistance to change when faced with transformative challenges. Resistance to change within project managers stalls organizational progress. Lines et al. (2015) observed that project managers must focus on resistance to change or risk project failure. Over time, a legacy of researchers such as Coch and French (1948) recognized resistance to change as a critical barrier to progress in the workplace. This innate gravity for the security of tradition creates resistive emotional states during change (Lawrence et al., 2014), which a leader must recognize and address. Project managers must now mitigate resistance to change at an increasing rate, which according to Lundy and Morin (2013), calls for leadership skills. The effects of authentic leadership show the potential to ameliorate the resisting emotions of change through certain leadership attitudes and behaviors in project managers. Under OCT (Meyer & Allen, 1991), this study examined to what extent, if any, authentic leadership predicts resistance to change.

Baesu and Bejinaru (2013) described the inseparable nature of leadership and change in theory and practice. The expected outcomes of this study should predict that as authentic leadership behaviors increase in project managers, resistance to change decreases. This potential outcome would be consistent with Lundy and Morin's (2013) findings. According to Penava and Šehic (2014), it appears in both theory and practice that higher levels of authentic leadership behavior should lower the level of resistance to

change. This study explored the nature of authentic leadership and resistance to change in a national sample of project managers in the U.S.A.

The population of project managers consisted of volunteers enlisted through Qualtrics LLC, an online survey service organization. Chapter four contains a discussion on the generalizability of the research findings to the broader population of project managers beyond the United States. The demographic data collected in the survey described the individual's association with project management work, their tenure in the occupation, and if they are Project Management Professional (PMP®) certified, as well as gender, ethnicity, and education level. This data may provide additional insight into the relationship between authentic leadership behaviors and resistance to change in the population of project managers.

Qualtrics LLC survey services harvested the data sample from volunteer project managers using an online survey that includes the Authentic Leadership Questionnaire and the Resistance to Change Scale. Six additional questions serve to provide demographic information to understand better the sample population. The demographic data, which led the survey questions, includes age, gender, ethnicity, education level, project manager, tenure, and PMP® certification. Appendix A contains a quote and permissions letter that demonstrates site authorization. Once Qualtrics LLC representatives provided the collected data, a review of the results showed the external validity of the data. Data from the Project Management Institute may serve as a comparison reference in the check for a fair representation of the population. A power analysis scoped the needed sample size for Qualtrics LLC survey activities.

A power analysis addressed linear regression, multiple linear regression, as well as moderated multiple regression using G*Power. This study required a minimum sample size of N = 85. According to Faul, Erdfelder, Buchner, and Lang (2009), G*Power is a reliable statistical power analysis computer application suitable for social science research. Moderated multiple regression ("Laerd Statistic," 2013) determines whether the relationship between two variables depends, or is moderated, upon the value of a third dichotomous variable. The total number of tested predictors for RQ1 = 1. The total number of tested predictors for RQ2 = 4. The total number of tested predictors for RQ3 = 3. The significance was set at $p < .05$ and power was set at .80. The effect size was medium, $f2 = .15$. Results from the power analysis indicated that this study required a minimum a sample size of $N = 85$ for the linear multiple regression examinations. Given that the sample size threshold for this study was 85, an excess of 36 responses ensured sample quality. The use of G*Power provided an estimate of an adequate sample size as described, and Appendix H contains the a priori power analysis data from all modeling in this study.

Instrumentation

Research instruments are the surveys, tests, and scales that researchers employ to measure variables. According to Roof (2013), quality research relies on reliable and valid research instruments. Instruments such as the ALQ and RSC demonstrate quality characteristics through several research studies that examined the fundamental elements of the instruments including reliability and validity. The process of using the ALQ and RCS constituted the instrumentation of this study. In addition to the ALQ and RCS, the

instrumentation processes of this study collected demographic data to characterize further the sample.

Demographic questionnaire. The demographic information that the instrumentation process collected included gender, ethnicity, and years of experience, age, education level, and PMP® certification. This demographic information was selected as other studies conducted with project managers (Henderson et al., 2013; Pinto., 2013; Savelsbergh et al., 2016) have documented the influential roles that such demographic factors play in project managers' performance and behavior. The demographic information was interval in nature with the exceptions, of gender and PMP® certification. The demographic questions sought to characterize the sample under study.

Authentic leadership questionnaire. The ALQ (Walumbwa et al., 2008) measured the authentic leadership overall. The ALQ also contains sub-scales that measure self-awareness, relational transparency, balanced processing, and internalized moral perspective. The ALQ, which is a 16-item instrument, contained no changes to the published instructions, rating scale, anchors, or order of the questions. All questions as presented in the ALQ version 1.0 self-questionnaire form the bases for the variable measurements. The ALQ uses a five-point Likert scale ranging from 0 - not at all, 1 - once in a while, 2 - sometimes, 3 – fairly often to 4 – frequently. The resulting scores provided an overall measure of authentic leadership. Sound ALQ instrument reliability and validity measures supported the integrity of the scores.

Roof (2013) cited 11 different studies that each reported good Cronbach's alpha values as evidence of the ALQ's reliability. As exemplified in Table 5, Walumbwa et al.

(2008) demonstrated the reliability of the four ALQ subscales while Peus et al. (2012) measured the reliability of the four subscales and the ALQ overall.

Table 5.

ALQ Reliability Coefficient Examples

Study	Self-awareness	Relational transparency	Internalized moral perspective	Balanced processing	ALQ
Walumbwa et al. (2008)	.85	.78	.78	.77	NR
Peus et al. (2012)	.86	.81	.85	.78	.94

Note. NR not reported

To the extent that an instrument measures what it is supposed to with fidelity, it has validity. Roof (2013) reviewed 11 distinct studies to show compelling support for the validity of the ALQ. As exemplified in Table 6, Walumbwa et al. (2008) and Peus et al. (2012) independently demonstrated the validity of the ALQ through conformity factor analysis. Bakari and Hunjra (2017) also provided evidence of the fitness of the ALQ through CFA while using three independent samples. The researchers provided evidence of construct, convergent, predictive validity as well as the reliability of the ALQ.

Table 6.

RCS Conformity Factor Analysis Validity Examples

Study authors	N	X^2	df	CFI	RMSEA	Factor Loading
Walumbwa et al. (2008)	224	234.70*	98	.97	.05	.66-.93*
Peus et al. (2012)	306	251.15*	100	.94	.07	NR

The grounded research of Walumbwa et al. (2008) validated the ALQ as a theory-based measure using five distinct samples. The confirmatory factor analyses substantiated a high order model of authentic leadership as contained in the ALQ. Walumbwa et al. (2008) used samples from two university settings and three from the practitioner field.

The researchers conducted field studies in firms located in the United States, China, and Kenya. The diverse samples included in the ALQ theory-based measure study (Walumbwa et al., 2008) contributed to the affirmative higher order results as well as the generalizability of the findings. The following shows the ALQ (Walumbwa et al., 2008) instructions and three sample questions.

Instructions: The following survey items refer to your leadership style, as you perceive it. Please judge how frequently each statement fits your leadership style using the following scale:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, If not always
0	1	2	3	4

As a leader, I …

1. say exactly what I mean   0 1 2 3 4
2. make decisions based on my core values   0 1 2 3 4
3. seek feedback to improve interactions with others   0 1 2 3 4

Resistance to change scale. Per Oreg (2003) the Resistance to Change Scale measures an individual's dispositional inclination to resist change. The RCS scale measures the primary criterion variable in this study. The RCS scale also measures the RCS sub-components of routine seeking, emotional reaction, short-term focus, and cognitive rigidity. This study used resistance to change as a dependent variable in each hypothesis. The instrument format uses a six-point Likert scale ranging from 1 (strongly disagree), to 6 (strongly agree). The resulting scores measured the four traits of resistance to change and provide an overall measure of resistance to change.

Oreg (2003) conducted a grounded study across seven different sub-studies. The overall results show good Cronbach's alpha values as evidence of the RCS's reliability. Studies five, six, and seven also demonstrated the concurrent and predictive validates of

the scale. As exemplified in Table 7, the alpha values reflect a reliable instrument for

social science research.

Table 7.

Oreg et al. (2008) Reliability Coefficients

Study	Routine seeking	Emotional reaction	Short-term focus	Cognitive rigidity	RCS
Study five	.78	.79	.73	.81	.81
Study six	.68	.78	.76	.76	.82
Study seven time one	.80	.87	.84	.86	.91
Study seven time two	.79	.86	.87	.77	.93

Note. Adapted from "Dispositional Resistance to Change: Measurement Equivalence and the Link to Personal Values Across 17 Nations" by S. Oreg et al., 2008, *Journal of Applied* Psychology, 9(4) pp. 686-688. Reprinted with permission.

Oreg (2003) focused studies two, three, and four on confirming the structure of

the RCS and demonstrating the scales' convergent and discriminate validates. As

exemplified in Table 8, Oreg (2003) demonstrated the validity of the RCS through

conformity factor analysis. While the RCS proved reliable, study five, which examined

the relationship of the resistance to change using the RCS to Wonderlic Personnel Test

results did not produce significant scores. Overall the testing showed good concurrent

and predictive validities of the RCS.

Table 8.

RCS CFA Validity Examples

Study	*N*	X^2	TLI	CFI	RMSEA
Study two	193	135.64	.96	.97	.04
Study three	134	132.46	.95	.96	.05

Note. Only one non-significant loading factor in study two. Adapted from "Dispositional Resistance to Change: Measurement Equivalence and the Link to Personal Values Across 17 Nations" by S. Oreg et al., 2008, *Journal of Applied* Psychology, 9(4) pp. 686. Reprinted with permission.

Oreg et al. (2008) further conducted a grounded theory study on the RCS scale's

measurement equivalence across 17 nations. The purpose of the study was to validate

further the RCS scale as an instrument of utility across cultures. The researchers studied

data from 17 countries, 13 languages, and four continents. The results showed that the

measures of the RCS maintain consistent meaning in a variety of venues. This intensive

study demonstrated the RCS as a meaningful construct for purposes of scientific research.

The following shows three RCS (Oreg, 2003) sample questions that are scored on a six-

point Likert scale, which ranges from 1 (strongly disagree) to 6 (strongly agree).

1. I generally consider changes to be a negative thing   1 2 3 4 5 6
2. When I am informed of a change of plans, I tense up a bit   1 2 3 4 5 6
3. My views are very consistent over time   1 2 3 4 5 6

Validity

DeVellis (2012) described validity concerning whether an instrument measures

the characteristic intended. Roof (2013) further asserted that validity is the central issue

in determining the usefulness of a measurement. While an instrument may be reliable, if

it is not valid the essential characteristics of a proposed measure would not have

meaning. Researchers examine construct validity by examining convergent and

discriminate validity, which essentially demonstrates how elements of a scale should and

should not relate. Roof (2013) stated that confirmative factor analysis (CFA) provide

convergent and discriminate validity. While there appear no single means to assess CFA,

Roof (2013) recommend the X^2 value and an additional absolute index such as the

RMSEA or SRMR as well as an incremental index such as the CFI.

Validity describes the soundness of a research instrument by addressing how well

an instrument measures the intended object of the study. In this study, how well authentic

leadership could be measured, and how well resistance to could be measured constituted the validity of any following assertions about the relationship between authentic leadership traits and resistance to change. A description of the ALQ (Walumbwa et al., 2008) and the RCS (Oreg, 2003) scale's validity follows.

Authentic leadership questionnaire. Walumbwa et al. (2008) observed substantial convergent validity among the four trait measures of authentic leadership using the ALQ. When taken together the average correlation measures of the four traits were .69 (Walumbwa et al., 2008), which means that the four measures of self-awareness, relational transparency, internalized moral perspective balanced processing substantially converges to form a valid higher-order factor. The valid convergence of the four traits explains the relationships among the lower order measures as they relate to this study considering authentic leadership as a construct. The strength of the convergence soundly demonstrates the validity found in the ALQ instrument. Walumbwa et al. (2008) further asserted that the results of their research demonstrated sound discriminate and predictive validity of the ALQ as a research instrument. Table 9 shows the validity characteristics of the ALQ.

Table 9.

ALQ CFA Validity Assessment

Study authors	N	X^2	df	CFI	RMSEA	Factor Loading
Walumbwa et al. (2008)	224	234.70*	98	.97	.05	.66-.93*
Peus et al. (2012)	306	251.15*	100	.94	.07	NR
Qian et al. (2012)	273	191.29 NR	50	.94	.08	NR
Wang and Bird (2011)	917	705.20 NR	100	.98	.04	.55-.90 NR

Note. Adapted by permission from Springer Nature, "Authentic leadership questionnaire (ALQ) psychometrics" by R. Roof., 2013, *Asian Journal of Business Ethics*, 3(1) p. 62. Copyright 2013. Reprinted with permission.

NR not reported; *$p<.001$

Fusco et al. (2016) alternatively observed that the Authentic Leadership Inventory (ALI) (Neider, & Schriesheim, 2011) has content validity, reliability, and discriminate validity as well as greater internal consistency than the ALQ. While both the ALI and ALQ exist as valid authentic leadership measures, the ALQ is longer standing, more frequently used in research, and developed under rigorous testing. The validation of the ALQ as a theory-based measure demonstrated predictive validity for the ALQ. The zero-order correlations among the four sub-measures and outcomes give objective evidence of predictive validity, which Walumbwa et al. (2008) asserted was evidence to support the ALQ as a valid instrument.

Resistance to change scale. Oreg (2003) used seven distinct studies to demonstrate the concurrent and predictive validity of the RCS scale. The first study established the items for the Resistance to Change Scale. Studies 2, 3, and 4 framed the scales structure while establishing convergent and discriminate validities. Studies 5, 6, and 7 set the concurrent and predictive validities of the scale. The original RCS scale definition contains 21 factors across the four RCS traits. The factors reduced to 15 through testing and instrument validation. The results of the studies show a four-trait structure to resistance to change: routine seeking, emotional reaction to imposed change, short-term focus, and cognitive rigidity. The seven-study work of Oreg (2003) validated the scale's concurrent and predictive characteristics.

In 2008 Oreg et al. (2008) observed that Oreg (2003) made the previous validity assertions based on a population mainly from the United States. To demonstrate further the validity of the scale, analysis data from 17 countries advanced the objective evidence of the RCS Scale as a valid scientific measurement instrument. This comprehensive

research showed the strength of the instrument as a valid means to measure resistance to change. In short, the RCS instrument proved an effective measure of resistance to change across various nationalities, languages, and cultures.

Oreg et al. (2008) examined the root-mean-square error of approximation (RMSEA) and the comparative fit index (CFI) as well as the goodness-of-fit index to demonstrate construct validity. Table 10 shows the results of the validity examination by Oreg et al. (2008).

Table 10.

Oreg et al. (2008) RCS CFA Validity Summary

	N	SD	X^2	RMSEA	CFI	GFI
Australia	251	0.57	172.56	.050	.93	.93
China	194	0.62	170.07	.055	.94	.91
Croatia	246	0.61	159.88	.045	.97	.93
Czech Republic	224	0.56	184.24	.057	.92	.91
Germany	206	0.48	131.36	.033	.97	.93
Greece	386	0.50	227.29	.054	.93	.94
Israel	241	0.59	193.42	.058	.93	.92
Japan	337	0.52	199.46	.051	.91	.93
Lithuania	212	0.51	171.39	.053	.92	.91
Mexico	265	0.58	216.74	.062	.92	.90
Netherlands	205	0.52	177.59	.058	.94	.91
Norway	266	0.56	218.21	.063	.92	.91
Slovakia	171	0.51	165.97	.065	.90	.89
Spain	288	0.58	188.86	.044	.95	.94
Turkey	241	0.54	190.22	.056	.90	.91
United Kingdom	204	0.51	160.90	.062	.90	.90
United States	264	0.54	183.08	.044	.95	.94
M	247.12	0.55		.050	.93	.92

Note. Adapted from "Dispositional Resistance to Change: Measurement Equivalence and the Link to Personal Values Across 17 Nations" by S. Oreg et al., 2008, *Journal of Applied* Psychology, 9(4) pp. 685. Copyright 2008. Reprinted with permission.

The comprehensive analyses of both the ALQ and the RCS showed robust instrument validities. DeVellis (2012) described validity regarding whether an instrument measures the characteristic intended. The ALQ and the RSC measured the predetermined

characteristics of authentic leadership and resistance to change. Based on the validity of the instruments this study assessed the relationship, if any, between the two constructs. Expert researchers demonstrated the usefulness of both instruments through comprehensive longitudinal studies and the use by many researchers. Just as an instrument must demonstrate the quality of validity, reliability must also characterize the instruments.

Reliability

Reliability describes how well an instrument consistently measures against the objective. According to Roof (2013), reliability is the primary measure researchers use to ensure consistency, but it is not sufficient to establish validity. In effect, an instrument could be reliable, but not valid. The essence of reliability is essential to demonstrate how consistently results from a given survey show from one sampling to the next. Researchers rely on Cronbach's alpha scores to demonstrate internal consistency of multi-item scales such as the ALQ and RSC. In effect, the reliability alpha scores tell a researcher how closely a set of values are as a group. A high alpha reflects high internal consistency or reliability.

Consistency from one administration of a research instrument to the next administration indicates reliability. The reliability of this study hinges on the consistency of the ALQ and RSC. In each case, researchers have demonstrated through multiple studies that the use of the instruments provided stable and consistent results. The same instrument administered at separate times to the same sample should yield stable results. A discussion of the Authentic Leadership Questionnaire and the Resistance to Change Scale's reliability follows.

Authentic leadership questionnaire. The Cronbach's Alpha measurements for
the ALQ (Walumbwa et al., 2008) exceed .70, demonstrating a high degree of reliability.
Per Walumbwa et al. (2008), the internal consistency alphas for each of the four sub-
measures were at or above 0.70 as well. Self-awareness tested at 0.73, relational
transparency at 0.77, internalized moral perspective at 0.73 and balanced processing at
0.70 (Walumbwa et al., 2008), which meets the threshold for highly reliable
instrumentation. Additionally, several other researchers (Peus et al., 2012; Qian, Lin, &
Chen, 2012; Wang & Bird, 2011; Wong & Laschinger, 2013) have validated the ALQ
reliability in diverse settings as shown in Table 11.

Table 11.

ALQ Reliability, Diverse Nations

Study authors	Country	Self-awareness	Relational transparency	Internalized moral perspective	Balanced processing	ALQ
Peus et al. (2012)	Germany	.86	.81	.85	.78	.94
Qian et al. (2012)	China	.89	89	.86	.84	.96
Wang and Bird (2011)	US	.92	.87	.76	.81	NR
Wong and Laschinger (2013)	Canada	.93	.88	.89	.86	.97

Note. Adapted by permission from Springer Nature, "Authentic leadership questionnaire (ALQ)
psychometrics" by R. Roof., 2013, *Asian Journal of Business Ethics*, 3(1) pp. 60. Copyright 2013.
Reprinted with permission.
NR not reported

Resistance to change scale. During the instrument validation process, Oreg
(2003) reported that resistance to change alpha coefficients were: 0.88 for the total
resistance-to-change score and 0.82 for routine seeking, 0.78 for emotional reaction, 0.78
for short-term focus, and 0.82 for cognitive rigidity. In 2008, Oreg et al. further studied
dispositional resistance to change across 17 nations and demonstrated a coefficient alpha
of 0.70 or above with a mean alpha of 0.80 and coefficients ranging from 0.72 to 0.85.

The comprehensive testing of this instrument assures an instrument with sound reliability

as reflected in Table 12.

Table 12.

Oreg et al. (2008) RCS Reliability across 17 Nations

Country	Routine seeking	Emotional reaction	Short-term focus	Cognitive rigidity	RCS
Australia	.78	.73	.80	.85	.82
China	.82	.75	.81	.85	.85
Croatia	.82	.84	.83	.84	.84
Czech Republic	.85	.83	.87	.86	.84
Germany	.79	.65	.75	.88	.88
Greece	.71	.58	.75	.87	.82
Israel	.80	.81	.80	.84	.85
Japan	.81	.72	.80	.78	.75
Lithuania	.76	.81	.82	.87	.77
Mexico	.71	.76	.80	.78	.79
Netherlands	.78	.74	.83	.83	.85
Norway	.79	.76	.73	.86	.84
Slovakia	.77	.75	.79	.84	.79
Spain	.79	.76	.84	.82	.81
Turkey	.74	.77	.80	.83	.77
United Kingdom	.77	.77	.83	.84	.78
United States	.64	.73	.71	.72	.83
M	.77	.75	.80	.83	.80

Note. Adapted from "Dispositional Resistance to Change: Measurement Equivalence and the Link to Personal Values Across 17 Nations" by S. Oreg et al., 2008, *Journal of Applied* Psychology, 9(4) pp. 685. Reprinted with permission.

Data Tables 11 and 12 for the ALQ and RCS show Cronbach alpha scores

reflective of high internal consistency. The reliability consistency reinforces the validity

scores of the two instruments. According to Roof (2013), reliability is the primary

measure researchers use to ensure consistency, but it is not sufficient to establish validity.

While an instrument could be reliable, but not valid, the ALQ and RCS demonstrate both

characteristics. The essence of reliability is essential to demonstrating how consistently

results from a given survey show from one sampling to the next. The reliability measures

of the ALQ and RCS reflect instruments that consistently measured against the objectives

of this study. The valid and reliable instrumentation of this study collected data in a disciplined and scientific manner.

Data Collection and Management

After receiving approval from a Grand Canyon University Institutional Review Board (IRB), Qualtrics LLC received, assembled, and prepared the survey for distribution. The IRB ensures that the researcher conducts the study according to legal, institutional, and ethical standards. The IRB review process ensured protections of the rights and welfare of the project managers who engage in this study. The following data collection for this study was in the form of responses to two survey instruments and a set of demographic questions. Qualtrics LLC deployed the questions online.

For this study, Qualtrics LLC, an online survey organization, provided the data collection services. Qualtrics LLC services identified the population of project managers and collected their data accordingly. The entire process was carried out through electronic means, so the researcher had no direct contact with the survey participants. The online means of data collection shows potential to gain many project managers quickly. Weigold et al. (2013) summarized that paper-and-pencil and internet data collection processes generally produce equivalent results. The potential to gain faster responses and enhance the anonymous participation give positive reasons to engage Qualtrics LLC in the data harvest. Representatives of Qualtrics LLC collected and stored the data securely onto an encrypted electronic space that is only accessible to the researcher using a unique password.

Potential participants in the survey received a description of the survey purpose and a consent statement before entering the survey question page. A mouse-click on the

term "accept" demonstrated participant acceptance of the consent statement and a

willingness to engage in the survey. The participants first received seven demographic

questions, and the 16 question Authentic Leadership Questionnaire followed, finally the

17 question Resistance to Change Scale concluded the survey. The data was ordered in a

spreadsheet that did not contain participant names. The isolation between the data

collection and the researcher safeguarded participant anonymity. Qualtrics LLC provided

the data to the researcher in an Excel format. The researcher stored the survey

information on an isolated, password protected hard-drive with encryption. The use of

SPSS provided the means for data analysis. The following steps summarize the proposed

data collection and management processes:

1. Obtained IRB approval from Grand Canyon University.

2. Assembled the statements of introduction, confidentiality, and consent,
    demographic questions, ALQ (Walumbwa et al., 2008), and the RCS (Oreg,
    2003). This step built a complete package of work for the study purpose.

3. Scheduled the survey timing and distribution with Qualtrics LLC services. Leedy
    and Ormrod (2016) reported that the timing of the research is vital to obtaining
    high yield results. The deployment of the survey must consider timing around
    holidays and breaks when project managers may not be available.

4. Distributed the survey using Qualtrics LLC services. This step deployed the
    survey to the target population of project managers. As an online market research
    sample aggregator, Qualtrics LLC maintains the highest quality by using Grand
    Mean certified sample partners. The majority of Qualtrics LLC samples come
    from traditional, actively managed research panels. To exclude duplication and
    ensure validity, Qualtrics LLC checked every IP address and used other
    technology to provide reliable results.

5. Project managers who agreed to serve on Qualtrics LLC panels received the
    surveys via an email invitation. Participants first viewed the informed consent
    statement and click on the term "accept" before viewing the survey questions.
    Those project managers who accepted the consent statement and viewed the
    questions could click out of the survey at any time with no restrictions or penalty.

6. Qualtrics LLC allowed two weeks for survey participant responses. The two-week
    timeframe aimed to allow ample time, without excessive lag between fielding and

response. If the initial fielding of the survey failed to reach the sample size threshold, Qualtrics LLC would administer subsequent waves of the survey using the same timeframe parameters.

7. Downloaded the results from Qualtrics LLC onto an encrypted hard drive. This step enhanced data security by isolating the data in a secured location.

8. The researcher safeguarded the data by keeping data separate from other drives and files. This step furthered the data security from unintended release.

9. Conducted regression testing.

10. Analyzed the data. This step transitioned the work from data collection to data analysis procedures.

11. Data Maintenance. All the data collected will be stored for three years following completion of the study and then destroyed.

Data Analysis Procedures

The purpose of this quantitative correlational research was to determine what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification significantly moderates the relationship between these two constructs. Three research questions and the associated null and alternative hypothesis were central to this research:

Predictor Variable 1: Authentic leadership – interval

Predictor Variable 2: Self-awareness – interval

Predictor Variable 3: Relational transparency – interval

Predictor Variable 4: Internalized moral perspective – interval

Predictor Variable 5: Balanced processing – interval

Moderator Variable: PMP® certification - dichotomous

Criterion Variable: Resistance to change – interval

RQ1. To what extent, if any, does authentic leadership predict resistance to change?

H$_{01}$: There is no statistically significant relationship between authentic leadership and resistance to change.

H$_{1a}$: There is a statistically significant negative relationship between authentic leadership and resistance to change.

RQ2: Do each of the four authentic leadership components significantly predict resistance to change?

H$_{02}$: There is no statistically significant relationship between self-awareness and resistance to change.

H$_{2a}$: There is a statistically significant negative relationship between self-awareness and resistance to change.

H$_{03}$: There is no statistically significant relationship between relational transparency and resistance to change.

H$_{3a}$: There is a statistically significant negative relationship between relational transparency and resistance to change.

H$_{04}$: There is no statistically significant relationship between internalize moral perspective and resistance to change.

H$_{4a}$: There is a statistically significant negative relationship between internalized moral perspective and resistance to change.

H$_{05}$: There is no statistically significant relationship between balanced processing and resistance to change.

H$_{5a}$: There is a statistically significant negative relationship between balanced processing and resistance to change.

RQ3: To what extent, if any, does PMP® certification serve as a moderator for

authentic leadership and resistance to change?

H_{06}: PMP® certification does not serve as a statistically significant moderator for

authentic leadership and resistance to change.

H_{6a}: PMP® certification serves as a statistically significant moderator for

authentic leadership and resistance to change.

Data organization and coding. Qualtrics LLC collected and provided the data

for research question analysis. The researcher immediately checked for data quality

organization, cleanliness, and coding to ensure clarity and completeness. Qualtrics LLC

agreed to replace respondent data that was straight-lined through the surveys or those

finished in a third of the average survey completion length. Qualtrics LLC estimated that

the survey package for this study would take approximately 10 minutes to complete.

Qualtrics LLC quality checked the data and included no personal data. Upon receipt, the

data were examined for completeness and accuracy. The researcher had up to 14 days

review the results and identify items that may need replacement. The results from the

power analysis reflect a sample size of $N = 85$. The data was analyzed for descriptive and

inferential statistics.

Descriptive statistics. The descriptive statistical analysis of interval data helps to

show patterns and describe the nature of the information. The mean, standard deviation,

minimum, maximum, skewness, and kurtosis are all descriptive representations that give

context to a set of data. For this study, both measures of central tendency and measures

spread contributed to the analysis. The mode, median, and mean measured central

tendency, while standard deviation measures the statistical spread. This information along

with the demographic data characterized the population and its associated data. Tables containing the statistics will generate from SPSS for inclusion in the analysis report.

Tests of assumptions. To interpret data reliably, a set of assumptions must first be satisfied. Assumptions vary according to the data and the testing type. This study calls for the examination of two sets of assumptions, linear regression and the moderator analysis with a dichotomous moderator. First, the six assumptions of linear regression clarified if the linear regression data analysis applies to the RQ1 criterion and predictor data. According to Lared Statistics (2013), six assumptions include (1) the data must be measured at the continuous level. The data in this study must be continuous interval data from Likert scale responses. (2) There must be a linear relationship between the two variables. A scatterplot produced with SPSS will give evidence of linearity. Should the plots appear nonlinear, a non-linear regression analysis may become necessary. (3) There should be no significant outliners. An outlier is a criterion variable value that is distinctly different from the value predicted by the regression equation. A casewise diagnostic will address any outliers that may occur. (4) Durbin-Watson statistics will serve to check independent of observations. (5) The data must show homoscedasticity. This means that the variances along the fit line remain similarly distributed. (6) The residual errors of the regression line should be normally distributed. A histogram with a superimposed normal curve or a P-Plot must explain any abnormalities in the residual errors. Verification of assumption 1 and 2 must complete before moving to assumptions 3-6.

Second, the eight assumptions of multiple linear regression must clarify if the data analysis applies to the RQ2 criterion and predictor data. According to Laerd Statistics (2013), the eight assumptions of a multiple linear regression analysis include: (1) the

criterion variable should be measured, interval or ratio, on a continuous scale; (2) There must be two or more continuous predictor variables; (3) there should be independence of observations demonstrated using a Durbin-Watson statistic test; (4) There must be a linear relationship between the criterion variable and each predictor variable, evidenced with a scatterplot; 5) the data must show homoscedasticity error variances for the variables; (6) The data may not show multicollinearity demonstrated through an inspection of correlation coefficients and tolerance/VIF values; (7) there should be no significant outliers very different to the value predicted by the regression equation; (8) residual errors are approximately normally distributed evidenced using a histogram and Normal P-Plot.

According to Laerd Statistics (2013), the eight assumptions of a moderator analysis with a dichotomous moderator include: (1) the criterion variable should be measured, interval or ratio, on a continuous scale; (2) There must be a linear relationship between the criterion variable and the predictor variable, evidenced with scatterplot; (3) the moderator variable must be dichotomous; (4) there should be independence of observations demonstrated using a Durbin-Watson statistic; (5) the data must show homoscedasticity error variances for the variables; (6) The data may not show multicollinearity demonstrated through an inspection of correlation coefficients and tolerance/VIF values; (7) there should be no significant outliers very different to the value predicted by the regression equation; (8) a Shapiro-Wilk test for normality should show that the residual errors are approximately normally distributed. The eight assumptions of a moderator must clarify if the data analysis applies to the RQ3 criterion and predictor data.

RQ1 inferential statistics. This simple linear regression analysis provided scatterplots to show the strength and linear direction of the potential relationship, which the value of *r* based on SPSS calculations represents. Further, a linear regression analysis evaluated the significance of authentic leadership as a predictor of resistance to change in project managers. The unstandardized beta (*b*) value represents the slope of the line between the predictor variable and the dependent variable. The standardized beta value (*b**) ranges from -1 to 1; gives the strength of the relationship between the predictor and dependent variable. A positive beta coefficient would suggest a positive impact on resistance to change, and a negative beta coefficient would mean a negative impact on resistance to change. In this study, a negative beta coefficient is expected. The statistical analysis referenced a significance level of $p < .05$ throughout the study.

The outputs of SPSS linear regression testing include scatterplots, histogram, Normal P-P Plot, casewise diagnostics, and the Durbin-Watson statistic. The outputs contributed to the test of assumptions and for statistical relevance. The analysis also included three tables. First, the model summary table will provide the *R* and R^2 values, which. The R^2 value shows how much of the total variation in resistance to change can be explained by authentic leadership. Second, an ANOVA table showed the statistical significance of the regression model concerning the criterion variable. Last, the coefficients table showed the information needed to predict resistance to change and if authentic leadership is statistically significant to the model.

RQ2 inferential statistics. A multiple linear regression analysis explained the variance of the four-factor model and the relative contribution of each of the predictor variables. The predictor variables are self-awareness, internalized moral perspective,

relational transparency, and balanced processing. The criterion variable was resistance to change. SPSS produced several tables which provided evidence of all eight assumptions and the means to analyze each variable.

RQ3 inferential statistics. According to Laerd Statistics (2013) adding an interaction term in a multiple regression model determines if a moderating effect exists, which Aguinis (2004) referred to as a moderated multiple regression (MMR). Authentic leadership acted as a predictor variable, PMP® certification served as a predictor variable in the form of a moderator, and resistance to change functioned as the criterion variable. A dummy variable and an interaction term were produced using SPSS for use in the moderator multiple regression. The dummy variable reflects the presence or absence of the PMP® certification using the value of 1 or 0. The yes responses to the PMP® certification survey question was coded as a 1 and termed PMP_Yes. The no responses were coded as a 0. An interaction term was also produced using SPSS. According to Roof (2013), an interaction variable reveals the effect of two variables multiplied together. The variable PMP_Yes was multiplied by the ALQ_Mean to create the interaction term for this study. SPSS output several tables which provided validation of all eight assumptions and provided the means to analyze the moderator variable.

A model summary table proved an R^2 value that will determine the standard error of the estimate, which was used to determine how well the regression models fit the data. An ANOVA table provided an F-ratio to show if the overall regression modeling is a good fit for the data. Additionally, a coefficients table showed the statistical significance of each of the predictor variables. A $p < .05$ value demonstrates that the significance coefficients are statistically significantly different from zero. Additionally, a coefficients

table displays the value *B*, used to report the moderated multiple regression equation. Laerd Statistics (2013) also suggests that once a statistically significant interaction is evident, then post hoc probing may give further evidence through regression line (slope) analysis.

Ethical Considerations

Caruth (2015) asserted that ethics in research is a shared responsibility with considerable consequences. The careful consideration of ethics relative to this project deserved reflection and due diligence. This study did not present significant ethical problems. The research for this study did not involve personal bias such as a current employer. The interaction with the sample population occurred via Qualtrics LLC through electronic means avoiding direct contact with the researcher. While some demographic data was collected, personal and identifying data was not. The participants completed the survey voluntarily and anonymously. The study conformed to privacy standards, and all participants could opt out of the survey with-out follow up or interventions. The University Institutional Review Board (IRB) reviewed the package of work before proceeding with data collection. Participants received informed consent provisions as necessary to confirm the voluntary participant, before entering the survey activity. The adult research participants risk little in this activity. Security protections and encryption safeguarded the participant so that personal disclosure was limited to the fullest extent possible.

Qualtrics LLC provided a quote and permissions letter as evidence of site authorization, which is included in Appendix A. To enhance confidentiality, Qualtrics LLC managed the completed survey data securely. The researcher was the sole person

authorized to gain access to the information. A username and password contributed to access security measures. Coding of any potentially identifiable data further ensured confidentiality and anonymity in the results. The researcher kept the data received from Qualtrics LLC on a password-protected hard drive separate from internet connectivity. All the data collected will be stored for three years following completion of the study and then destroyed.

Limitations and Delimitations

Limitations. The research collected self-reported information through surveys, which could be inaccurate to some degree. The measurement instruments while valid, may not reflect the perspective of the participants due to biases and other reasons. According to Weigold et al. (2013), self-report survey services using valid and reliable instruments appear acceptable when viewed through the lens of comparative benchmarks in research projects. In contrast, Kormos and Gifford (2014) observed that survey participants might not provide great fidelity between self-reported perceptions behaviors, which could affect survey responses. The integrity of the measurement instruments in this study mitigated any significant degree of inaccuracy, to the extent possible, induced through the self-reporting means as demonstrated through previous testing and use of the instruments. Researchers consider instruments such as the ALQ (Walumbwa et al., 2008) and the RCS (Oreg, 2003) as reliable because they have robust data validity across may research studies.

Delimitations. The survey of project managers in this study delimited the sample scope to project managers in the USA. While there may be variation in project managers in other parts of the world, this delimited population provided important

indicators for managing resistance to change in American project managers. By controlling the scope of the demographic sample, the study was manageable within the constraints of the project definition. Future studies may compare this work as a benchmark with populations in other regions. Given the time and financial constraints, this delimitation creates a robust yet realistic population for the project.

Summary

It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Nixon (2014) explained that mitigating resistance is a continuous leadership challenge. This study focused on the leader aspect of authentic leadership and utilized Meyer and Allen's (1991) organizational commitment theory (OCT) as a guiding theory. Authentic leadership is integral to organizational commitment, and authentic leaders tend to demonstrate elevated levels of organizational commitment and are skilled in promoting commitment among their employees (Öztekin, İşçi, & Karadağ, 2015; Rego et al., 2016).

Using OCT (Meyer & Allen, 1991), this study examined what, if any, relationship exists between authentic leadership and resistance to change. This study not only addressed the gap in the literature regarding authentic leadership effects on resistance to change, but it also examined the strength of the four subordinate authentic leadership factors of self-awareness, relational transparency, internalized moral perspective, and balanced processing. The study also examined whether a professional certification in a formal project management methodology may serve as a moderator for authentic

leadership and resistance to change. According to Lundy and Morin (2013) formal project management methodology is instrumental in reducing resistance to change.

This research presented three questions. The first research question: To what extent, if any, does authentic leadership predict resistance to change, directly supports the first clause of the problem statement, which is that it was not known if or to what extent a relationship exists between authentic leadership and resistance to change. The first question examines the higher order construct of authentic leadership in relationship to resistance to change. This relationship was examined using simple linear regression testing. The second research question: Do each of the four authentic leadership components significantly predict resistance to change, further supports the problem statement. The second question calls for a multiple linear regression examination of the four theoretical dimensions of authentic leadership in relation to resistance to change. The third research question: To what extent, if any, does certification serve as a moderator for authentic leadership and resistance to change provides a practical organizational dimension to the investigation in support of the second clause of the problem statement. Together the three questions seek to address the stated problem thoroughly: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator.

This study used linear regression techniques to harvest relevant data then examine the three research questions from an analytical perspective. The data analysis in Chapter four includes descriptive statistics and regression models as they relate to the questions

and the results of the data analysis question-by-question. The results of the data analysis

established the foundational context for the findings and implications in Chapter five.

Chapter 4: Data Analysis and Results

Introduction

The purpose of this quantitative correlational research was to determine what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification significantly moderates the relationship between these two constructs. It appears that human beings consistently show a propensity for custom and tradition over progressive change (Jost, 2015). Over time, a legacy of researchers (Kotter, 2012; Lewin, 1951) recognized resistance as a critical barrier to change. As described in the benchmark work of Coch and French (1948), resistance to change includes a combination of individual reactions to frustration coupled with strong group identity. Based on a study of project leadership influences on resistance to change Lundy and Morin (2013) surmised that positive, ethical, and participative project leadership ameliorates resistance to change.

A quantitative methodology was chosen to examine the predictor variables of authentic leadership and its multidimensional components of leader self-awareness, relational transparency, internalized moral perspective, balanced processing, and well as the moderating PMP® variable, with the resistance to change criterion variable. Privitera (2013) observed that the objective of such quantitative research aims to harvest realistic measurements. This study used a quantitative correlational design to determine if there is a relationship between variables. According to Puth et al. (2015) correlation designs test relationships among interval or interval variables. Though three research questions, five predictor variables, and one moderator variable were tested relative to one criterion variable.

The predictor variables in this study were authentic leadership and its multidimensional components of leader self-awareness, relational transparency, internalized moral perspective, and balanced processing, as measured by the ALQ (Walumbwa et al., 2008). The criterion variable in this study was resistance to change, which is a tendency or reaction to avoid, suppress, and devalue the positive possibilities of change. The moderating variable in this study was PMP® certification, a professional certification of project managers offered through the PMI. The PMI tests candidates against the published Project Management Body of Knowledge. The conceptual and operational definitions of each variable, as well as the unit of measure further support the research questions and hypothesis.

Three research questions were developed to examine the problem. These research questions and the associated variables are listed below:

Predictor Variable 1: Authentic leadership – interval

Predictor Variable 2: Self-awareness – interval

Predictor Variable 3: Relational transparency – interval

Predictor Variable 4: Internalized moral perspective – interval

Predictor Variable 5: Balanced processing – interval

Moderator Variable: PMP® certification - dichotomous

Criterion Variable: Resistance to change – interval

RQ1. To what extent, if any, does authentic leadership predict resistance to change?

H_{01}: There is no statistically significant relationship between authentic leadership and resistance to change.

H_{1a}: There is a statistically significant negative relationship between authentic

leadership and resistance to change.

RQ2: Do each of the four authentic leadership components significantly predict

resistance to change?

H_{02}: There is no statistically significant relationship between self-awareness and

resistance to change.

H_{2a}: There is a statistically significant negative relationship between self-

awareness and resistance to change.

H_{03}: There is no statistically significant relationship between relational

transparency and resistance to change.

H_{3a}: There is a statistically significant negative relationship between relational

transparency and resistance to change.

H_{04}: There is no statistically significant relationship between internalize moral

perspective and resistance to change.

H_{4a}: There is a statistically significant negative relationship between internalized

moral perspective and resistance to change.

H_{05}: There is no statistically significant relationship between balanced processing

and resistance to change.

H_{5a}: That there is a statistically significant negative relationship between balanced

processing and resistance to change.

RQ3: To what extent, if any, does PMP® certification serve as a moderator for

authentic leadership and resistance to change?

H_{06}: PMP® certification does not serve as a statistically significant moderator for authentic leadership and resistance to change.

H_{6a}: PMP® certification serves as a statistically significant moderator for authentic leadership and resistance to change.

The first question examined the higher order construct of authentic leadership in relationship to resistance to change using simple linear regression (LR) testing. The second question examined self-awareness, relational transparency, internalized moral perspective, and balanced processing in relationship to resistance to change using multiple regression (MR) testing. The third question examined the two predictor variables of authentic leadership and PMP® certification in relationship to resistance to change using moderator multiple regression (MMR) testing. PMP® certification as measured by a yes or no demographic question presented the moderating variable. Baron and Kenny (1986) described a moderator as a third variable that affects the zero-order correlation between two other variables. The testing provided the statistical data necessary to address the purpose of this chapter.

The purpose of this chapter was to review and discuss the statistical findings, both descriptive and inferential, conducted throughout this study. The purpose, problem, research questions, and hypotheses provide the framework for the following discussion. The chapter opens with a review of the processes used to collect data and sampling information, including the original and final sample sizes. The chapter continues with presentations of participant demographics and the study variable descriptive statistics. The subsequent section provides a review of the findings from an analysis that tested the data assumptions of LR, MLR and MMR models. Attention is then given to the results of

the LR, MLR, and MMR models concerning the study hypotheses. A summary of the

findings and a transitional introduction to the next chapter conclude the chapter.

Descriptive Findings

The descriptive findings provide a statistical profile of the project manager

sample. This section details the sample participants' personal demographics, professional

demographics, and variable descriptors. The researcher contracted with Qualtrics LLC for

a sample quota of $N = 120$. Qualtrics supplied the $N = 121$ responses to the researcher.

The majority ($n = 153$, 78.1%) of excess survey responses were over-quota participants

beyond the contracted sample size $N = 120$. Eleven cases were eliminated for lack of

response variation, four cases were eliminated due to missing data, and six cases showed

inconsistencies such as 30 years of experience at 25-30 years of age. Twenty-one

(10.71%) of eliminated cases lacked study informed consent. Twenty-two (11.22%) cases

did not meet the study criteria of a position of project manager. Table 13 shows a

summary of the over-quota responses.

Table 13.

Survey Terminates Summary

	n	Percent (%)
Informed consent rejection	21	10.71%
Not a project manager	22	11.22%
Non-PMP® over-quota	27	13.78%
PMP® over-quota	56	28.57%
Extraneous, incomplete, or over-quota	27	17.65%

The descriptive findings provided a statistical profile of the project manager who

participated in this research study. The following sections provide details of the

demographic and work characteristics of the sample as well as the study variables. Tables

and figures augment the descriptive text.

Personal demographics. The study participants self-reported personal demographics including, age, gender, ethnicity, and education level. The sample consisted of $N = 121$ project managers of whom 18 did not report age. The age demographics included 9.71% ($n = 10$) participants ages 18-24 years, 38.83% ($n = 40$) participants ages 25-34 years, 31.07% ($n = 32$) participants ages 35-44 years, 14.56% ($n = 15$) participants ages 45-54 years, 4.85% ($n = 5$) participants ages 55-64 years, and one participant (0.97%) age 65 or higher, 0.97% ($n = 1$). The gender demographics included 52.07% ($n = 63$) female participants and 47.93% ($n = 58$) male participants. Most of the participants 61.16% ($n = 74$) were White, 19.83% ($n = 24$) were Hispanic or Latino, 8.26% ($n = 10$) were Asian or Pacific Islander, 7.44% ($n = 9$) were Black or African American, 2.48% ($n = 3$) reported Other and 0.83% ($n = 1$) participant was Native American or American Indian. Most of the sample had a bachelor's degree or higher with 8.26% ($n = 10$) completed High School, 13.22% ($n = 16$) had some college but no degree, 18.18% ($n = 22$) had an associate degree, 39.67% ($n = 48$) had a bachelor's degree, 16.53% ($n = 20$) had a master's degree, and 4.13% ($n = 5$) had a doctorate degree. Tables 14 through 17 summarize the personal demographics.

Table 14.

Age Demographics

Age	*n*	Percent (%)
18-24 years old	10	9.71%
25-34 years old	40	38.83%
35-44 years old	32	31.07%
45-54 years old	15	14.56%
55-64 years old	5	4.85%
65 years or older	1	0.97%

Table 15.

Gender Demographics

Gender	*n*	Percent (%)
Female	63	52.07%
Male	58	47.93%

Table 16.

Ethnicity Demographics

Ethnicity	*n*	Percent (%)
Asian or Pacific Islander	10	8.26%
Black or African American	9	7.44%
Hispanic or Latino	24	19.83%
Native American or American Indian	1	0.83%
White	74	61.16%
Other	3	2.48%

Table 17.

Education Demographics

Education	*n*	Percent (%)
High school graduate	10	8.26%
Some college credit, no degree	16	13.22%
Associate degree	22	18.18
Bachelor's degree	48	39.67%
Master's degree	20	16.53%
Doctorate degree	5	4.13%

Professional demographics. The study participants reported professional characteristics, which included project manager identification, PMP® certification status, and years of project management experience. Those who did not positively identify as a project manager were screened out of the survey. All participants (*N* = 121) were project managers. The criteria for the survey called for an even sampling of PMP® and non-PMP® certified project managers. Of the 121 participants 49.59% (*n* = 60) were PMP®

certified, 50.41% ($n = 61$) were not PMP® certified. The years of experience included

14.05% ($n = 17$) with less than 2 years of experience, 42.15% ($n = 51$) with 2-7 years of

experience, 32.23% ($n = 39$) with 8-15 years of experience, 4.96% ($n = 6$) with 16-23

years of experience, 1.65% ($n = 2$) with 24-29 years of experience, and 4.96% ($n = 6$)

with 30 or more years of experience. Tables 18 summarizes the professional

demographics.

Table 18.

Professional Demographics

Years of Experience	PMP® Yes	PMP® No	n	Percent (%)
Less than 2 years	0	17	17	14.05%
2-7 years	24	27	51	42.15%
8-15 years	27	12	39	32.23%
16-23 years	5	1	6	4.96%
24-29 years	2	0	2	1.65%
30 or more years	4	2	6	4.96%

Variable descriptors. The measures of central tendency describe the center or the

central position of the data. The central location of data characterizes the nature of the

data set. The mean, median, and mode depict the central tendency. When data has ideally

normalized the mean, median and mode are identical. The mean is the average score

produced by from the sum of the scores divided by the total number. According to Field

(2013), the standard deviation is the root-mean-square that represents the dispersion of

the data from its mean. The higher the standard deviation, the more spread there is from

the mean.

The mean scores included an authentic leadership ($M = 3.02$, $SD = .64$). The ALQ

subscales produced the following mean scores, relational transparency ($M = 2.96$, $SD = .70$), internalized moral (ethical) perspective ($M = 3.10$, $SD = .74$), balanced processing

(M = 3.02, SD = .74), and a self-awareness (M = 3.0, SD = .77). Resistance to change showed (M = 3.67, SD = .80). As another measure of central tendency, the median further characterizes the data.

The median is the middle score of the data (Field, 2013). The median shows descriptive utility with skewed data and is less affected by outliers than the median. The authentic leadership median = 3.02, the relational transparency median =3.00, internalized moral (ethical) transparency median =3.25, balanced processing and self-awareness showed a median = 3.00. The resistance to change median measure = 3.58. Additionally, the mode completed the central tendency characteristics.

The mode presents the most frequent value in the data. Authentic leadership resulted in a mode = 3.50, relational transparency reflected a mode = 3.40, internalized moral (ethical) perspective showed a mode = 3.50, the balanced processing mode = 3.67, while the self-awareness mode registered = 3.00. The resistance to change variable reflected a mode = 3.18. Skewness and kurtosis further characterize the data.

The symmetry of the data is characterized by skewness while kurtosis characterizes the sharpness of the peak of a distribution curve. According to Vogt (2005), skewness reflects the amount and direction of asymmetric distribution of the results. Positive values reflect right biased tails, and negative skews show left-biased tails. Kurtosis characterizes the peak of a standard bell curve. A positive Kurtosis would reflect a sharp curve, while a negative number would indicate a wild and flat curve. The two numbers contribute to a description of the data normality. Other terms such as the minimum, maximum, and quartile scores further characterize the spread of the data. Table 19 summarizes the descriptive statistics.

Table 19.

Descriptive Statistics

	ALQ	Transparency	Ethical	Balance	Self-Aware	RCS
N	121	121	121	121	121	121
Mean	3.02	2.96	3.10	3.02	3.01	3.67
Median	3.13	3.00	3.25	3.00	3.00	3.58
Mode	3.50	3.40	3.50	3.67	3.00	3.18[a]
Std. Dev.	.64	.70	.77	.74	.77	.80
Skewness	-.95	-.97	-1.10	-.70	-.84	.22
Skew Std. Er.	.22	.22	.22	.22	.22	.22
Kurtosis	.99	1.51	1.18	-.19	.33	-.69
Kurt. Std. Er.	.44	.44	.44	.44	.44	.44
Minimum	.69	.20	.25	1.00	.75	2.06
Maximum	4.00	4.00	4.00	4.00	4.00	5.53
25th %	2.63	2.60	2.75	2.67	2.50	3.09
75th %	3.50	3.40	3.75	3.67	3.50	4.24

Descriptive statistics for the variables of interest. The total number of tested predictors for RQ1 = 1, the total number of tested predictors for RQ2 = 4, and the total number of tested predictors for RQ3 = 2 The actual sample size was *N* = 121 There were no consequences, limitations, changes of statistical analysis processes or design attributable to sample size. A review of the Cronbach's Alpha scores shows a reliability perspective of the study data.

Cronbach alpha scores above .70 suggest good reliability. According to Vogt (2005), alpha scores at .70 or above mean that the instrument measures the intended dimension. When an alpha score equals .70, then 30% of the variance is random. Internal consistency scores above .70 indicate that the items included in the instrument are likely measuring the intended dimension (Vogt, 2005).

The Cronbach's Alpha measurements for the ALQ (Walumbwa et al., 2008) exceed .70, demonstrating a high degree of reliability. The internal consistency alphas for each of the four sub-measures were at or above 0.70 as well. Self-awareness tested at 0.73, relational transparency at 0.77, internalized moral perspective at 0.73 and balanced processing at 0.70, which meets the threshold for highly reliable instrumentation. Oreg (2003) conducted a grounded study across seven different sub-studies relative to the RCS. The overall results show good Cronbach's alpha values as evidence of the RCS's reliability in the range from 0.81-0.92.

To evaluate this study's Cronbach's alpha scores a reliability analysis was conducted using SPSS. The Cronbach's alpha scores in this study were all greater than .70 except balanced processing, which = .68. Table 20 summarizes the study Cronbach alpha score results from the reliability analysis.

Table 20.

Cronbach's Alpha Statistics

Instrument – Variable	Study Alpha Scores	Variance	*n* of Items
ALQ	.92	104.34	16
ALQ - Transparency	.77	12.13	5
ALQ - Ethical	.82	9.53	4
ALQ - Balanced Processing	.68	4.91	3
ALQ -Self-awareness	.84	9.52	4
RCS	.87	184.33	17

Note: The study data Cronbach's Alpha scores were calculated using a reliability analysis. The Instrument Alpha scores were reported in research articles including ALQ (Roof, 2013), ALQ sub-scales (Walumbwa et al., 2008) and the RCS (Oreg, 2003).

The .68 balance processing alpha score fell short of the .70 threshold. The balance processing variable was retained in the study for the following reasons. First, the shortfall was small measuring .02. Additionally, the highly researched balanced processing

instrument alpha was similarly less than the other ALQ alpha scores. A comparison between the ALQ instrument alphas reported by Roof (2013) and this study's alpha scores show a consistent pattern. Lastly, the Balanced processing subscale measured three questions, while three other ALQ subscales measured four or five question results.

As shown in Appendix K the ALQ variable and the associated subscale variables failed the Kolmogorov-Smirnov and Shapiro-Wilk test. The null hypothesis of the tests is that the population is normally distributed. A .05 alpha was used for the test. In each variable the $p < .05$, meaning that the null hypothesis of the test was rejected. The rejection gives evidence that the data tested was not normally distributed. Attempts to yield more normal results through centering, a reflection and square root transformation, as well as a reflect and logarithmic transformation, failed to produce acceptable results. The results indicated that the ALQ data for this study sample could not be entirely normally distributed. The implications for the tests used in this study remained consistent with Chapter 3, with the following amendments. In the following section, RQ1 and RQ2 data analysis were premised on the mean data of the ALQ and its subscales. The data analysis for RQ3 was based on centering of the ALQ variable to mitigate unacceptable homoscedasticity error variances induced with the introduction of the moderator variable. Appendix K contains Histograms of the ALQ and its subordinate subscales.

Data Analysis Procedures

The data analysis procedures center on the test of assumptions and the process used to analyze the data. The purpose of the data analysis procedures was to determine what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification

significantly moderates the relationship between these two constructs. Simple linear regression was used to examine RQ1, multiple regression was used with RQ2, and moderator multiple regression was used to test RQ3.

The initial survey data required some variable data conversions to produce the means scores from the instruments in this study. The ALQ contains the four subscales of transparency, ethical (internalized moral perspective), balanced processing, and self-awareness. As described in the instrument instructions the scores of each subscale were averaged to produce the scores for each scale of the instrument. A five-point Likert scale with foil values ranging from zero to four provided the framework for the ALQ. The scaling descriptors ranged from $0 =$ not at all, $1 =$ once in a while, $2 =$ sometimes, $3 =$ fairly often, and $4 =$ frequently if not always (Walumbwa et al., 2008). High scores reflected a greater authentic leadership propensity, and low scores reflected a lesser propensity for authentic leadership.

The ALQ variables were recoded into different (mean) variables. As noted in the ALQ instructions the raw score for the instrument and its subscales are the average of the scales. The mean conversion was necessary to convert the results of the 16 discrete questions into a composite value that represented the authentic leadership variable and the subscales of self-awareness, relational transparency internalized moral perspective, and balanced processing. Using SPSS, the mean score for each of the sixteen questions from each respondent was averaged to produce a composite score that represented the elements of the ALQ. The composite average results of the RCS scale were also calculated to form the dependent variable data. Unlike the RCS instrument, the ALQ contained no reverse coded questions.

A six-point Likert scale with foil values ranging from one to six provided the framework for the RCS. The results of 17 question RCS scale were averaged into a recoded mean score after reversing the scores of two questions in the scale. The two questions in the RCS were negatively worded relative to the other questions. In order for a high score response to have a consistent value in all responses, the reverse coding was addressed. To address the reverse coding, a 1 score was converted to 6, 2 was converted to 5, 3 was converted to 4, 4 was converted to 3, 5 was converted to 2 and 6 was converted to 1. The scaling descriptors ranged from 1 = strongly disagree, 2 = disagree, 3 = inclined to disagree, 4 = inclined to agree, 5 = agree, and 6 = strongly agree against increasing levels of resistance to change. While the instrument includes four subscales including routine seeking, emotional reaction, short-term focus, and cognitive rigidity, the sub-categories were not analyzed in this study. Before examining the test of assumptions, a post hoc power analysis (Appendix I) was conducted to ensure that the sample size was sufficient for the study purposes.

Each of the research questions required unique power testing given the nature of the tests and the number of variables. A standard power threshold of .80 was used in each case. The simple regression testing of RQ1 called for linear multiple regression: Fixed model, single regression coefficient using a two-tail analysis. The RQ1 post hoc testing based on the actual sample size of 121 resulted in a power value of .99 (Appendix J). The RQ2 linear multiple regression: Fixed model, R^2 deviation from zero post hoc testing resulted in a power value of .94. RQ3 required moderator multiple regression: Fixed model, R^2 deviation from zero post hoc testing resulted in a power value of .95. Tables 21 through 23 summarize the power analysis results.

Table 21.

RQ1 Power Analysis

T-Test	Noncentrality parameter λ	*t*	*df*	*N*	Power
RQ1: A priori	2.87	2.01	53	55	0.80
RQ1: Post hoc	4.26	1.98	119	121	0.99

Note. Appendix H and I

Table 22.

RQ2 Power Analysis

F-Test	Noncentrality parameter λ	*F*	d*f* numerator	*df* denominator	*N*	Power
RQ2: A priori	12.75	2.49	4	80	85	0.80
RQ2: Post hoc	18.15	2.45	4	116	121	0.94

Note. Appendix H and J

Table 23.

RQ3 Power Analysis

F-Test	Noncentrality parameter λ	*F*	*df* numerator	*df* denominator	Sample size	Power
RQ3: A priori	11.55	2.73	3	73	77	0.80
RQ3: Post hoc	18.15	2.68	3	117	121	0.95

Note. Appendix H and J

Tests of assumptions. Statistical tests of assumptions evaluate data characteristics, usually defined by a set of assumptions such as normality or linearity. Normality is one of several assumptions that characterize a set of data. Data that satisfies an assumption of normality would be symmetrically distributed around the center forming a bell-shaped curve. There are a variety of tests of assumption in statistical testing that must be met for the results to have meaning. When analyzing data, researchers must first check the test of assumptions ("Laerd," 2013) before making inferences from the data. The first research question of this study called for simple linear

regression testing, the second research question called for multiple linear regression testing, and the third research question called for moderator multiple regression testing. Each test had a specific list of assumptions requiring examination. The tests of assumptions were used in a formulary fashion to validate the survey data in this study. The following assumptions analysis aligns with the order of the research questions.

RQ1 tests of assumptions. The six assumptions of linear regression clarified if the nature of the RQ1 criterion and predictor data. According to Laerd Statistics (2013), six assumptions include (1) the criterion and predictor data must be measured at the continuous level. (2) There must be a linear relationship between the two variables evidenced in a scatter plot. (3) There should be no significant outliners. (4) Durbin-Watson statistics will to check independent of observations. (5) The data must show homoscedasticity. (6) The residual errors of the regression line should be normally distributed.

The first assumptions of continuous data were verified before moving to remaining assumptions. The criterion variable was measured at the continuous level using the RCS. The predictor variable was measured at the continuous level using the ALQ. The resulting continuous data from each instrument satisfied the initial assumption.

Assumption two called for a linearity examination. A linear relationship is necessary to determine how much the criterion variable changes for a one unit change in the predictor variable. The essence of linear regression testing predicts the value of one variable based on the value of another known variable. A scatterplot of resistance to change against the authentic leadership measures was generated in SPSS. Visual

inspection of the scatterplot indicated a linear relationship between the variables that meet the second assumption of linearity. Figure 4 presents the scatterplot results.
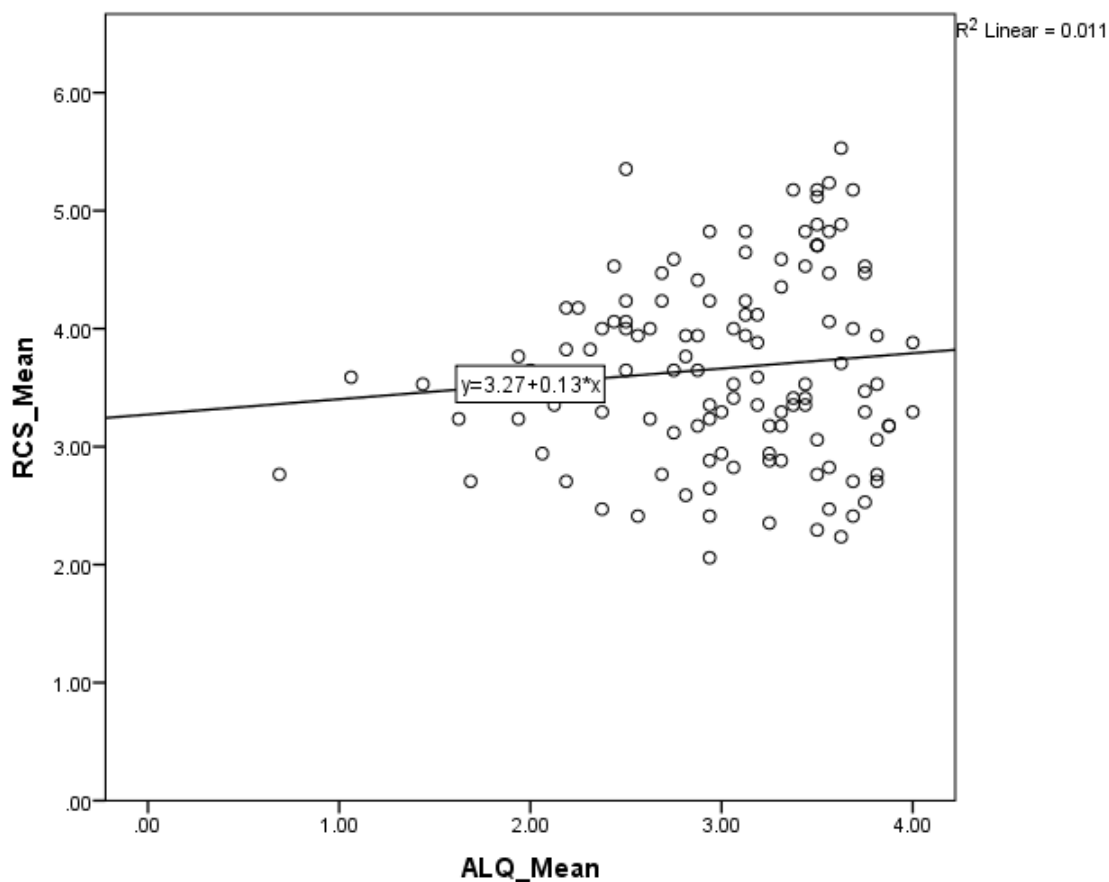

Figure 4. RQ1 linearity scatterplot.

Assumption three for outliers was examined using casewise diagnostics. According to Laerd (2013), outliers are cases where the dependent variable value is remarkably different to its predicted value. SPSS was set to detect cases where the standardized residual error of plus or minus three standard deviations. The casewise diagnostics detected no outliers.

Assumption four was tested using a Durbin-Watson test to examine the independence of observations. A Durbin-Watson statistic of approximately two indicates

that there is no correlation between residuals. There was independence of residuals, as asserted by the Durbin-Watson statistic of 2.01 as shown in Table 24.

Table 24.

RQ1 Durbin-Watson Statistic

Model	R	R^2	Adjusted R^2	*SE*	Durbin-Watson
1	.10[a]	.01	.002	.80	2.01

a. Predictors: (Constant), ALQ_Mean

b. Dependent Variable: RCS_Mean

Assumption five of homoscedasticity examines if the error residuals are consistent across the independent variable values. SPSS was used to plot the residuals against the standardized predicted values. Homoscedasticity is reflected when the residuals appear approximately equal or consistently spread across the plot. Figure 5 shows the homoscedastic characteristics of data.
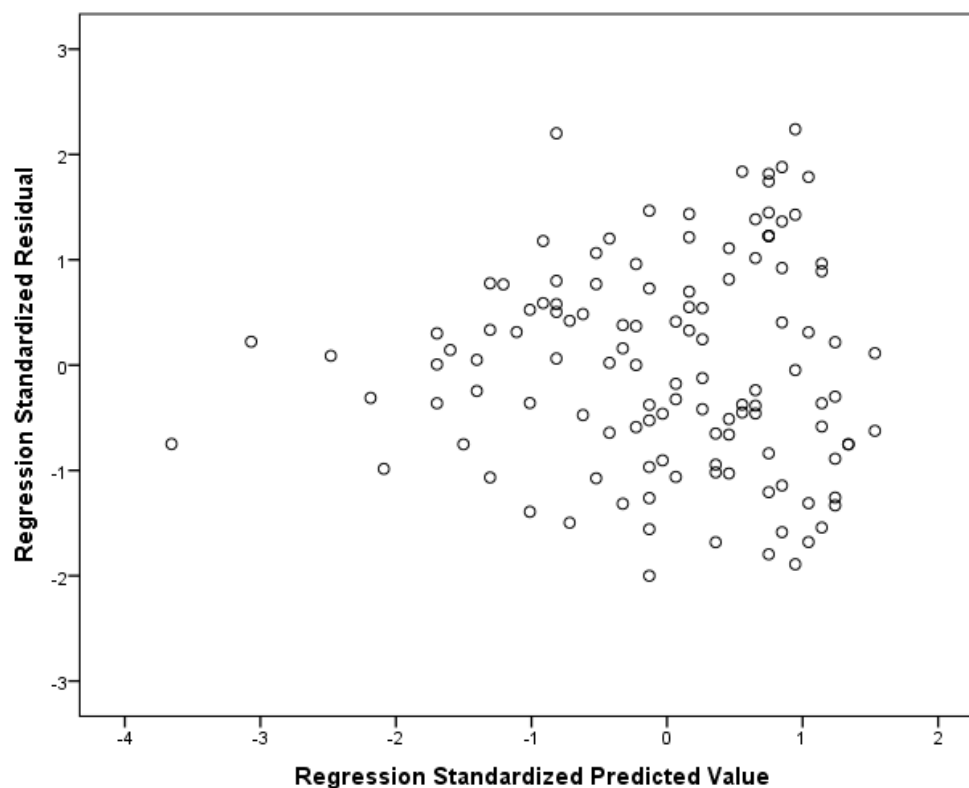

Figure 5. RCS mean homoscedasticity scatterplot.

Assumption six states that the residual errors of the regression line should be normally distributed A histogram and a normal P-P plot illustrate the normality of error residuals. An inspection of the illustrations showed the normality of the criterion variable. The histogram generally reflects a bell-shaped curve. The P-P plot compares the distribution of the residuals with a normal distribution. The solid line in the P-P plot represents the theoretical quantiles of a normal distribution. The P-P plot shows the points approximately along the diagonal line, reflective of a normal distribution. Figures 6 and 7 reflect a normal distribution
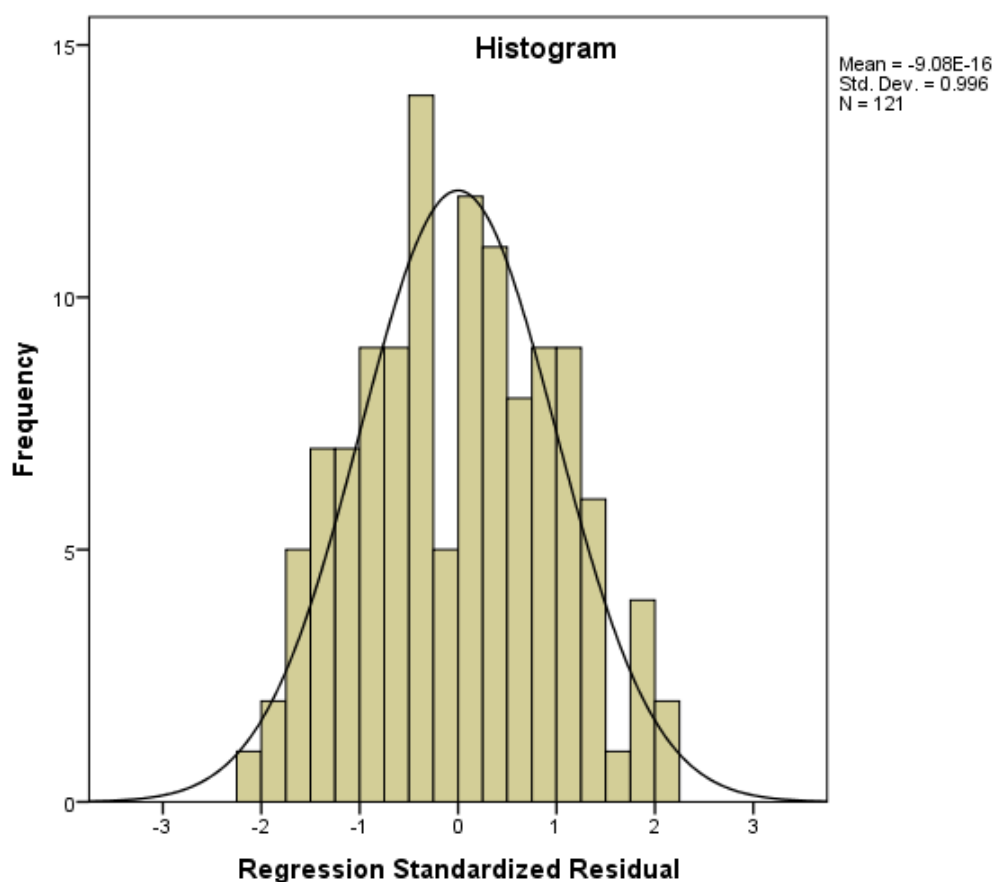
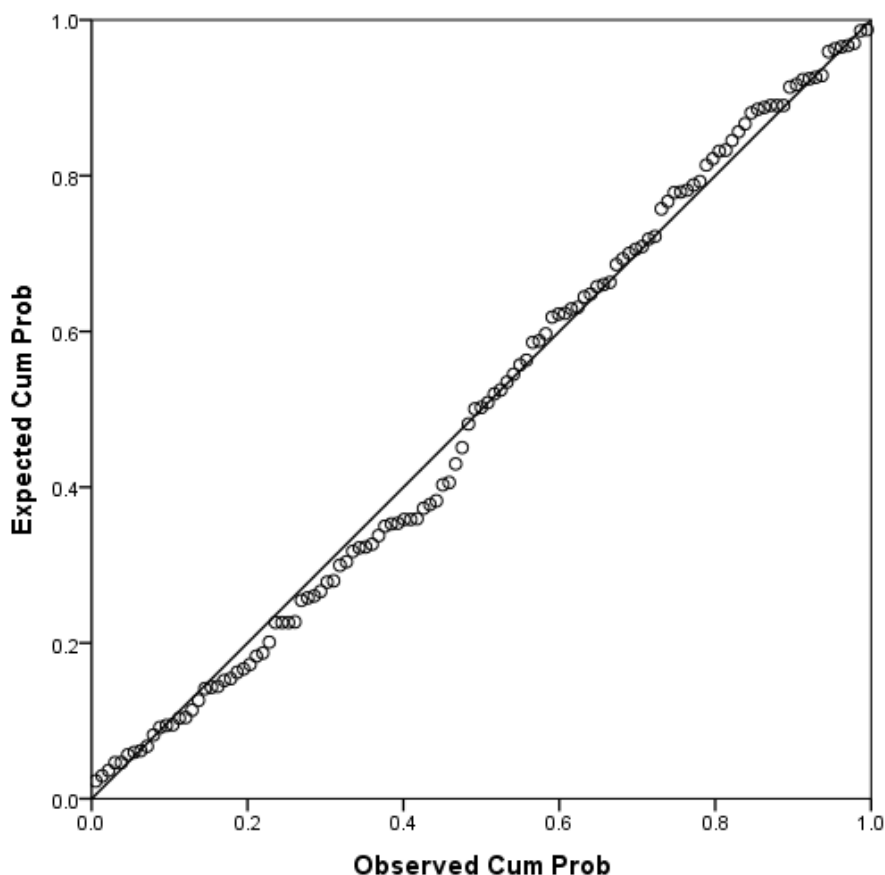

Figure 6. RQ1 RCS mean histogram.

Figure 7. RCS mean normal P-P plot.

The assumption of normality examines the residuals (errors) of the regression line for a normal distribution. The survey results of the ALQ predictor and its subscales showed a negative skew. A calculation of the *z*-scores for skewness and kurtosis revealed normality violations. Field (2013), Kim (2013), Laerd Statistics and others present the skewness z test of normality as a valid quantitative statistical means of assessing skewness. The *z* scores were calculated using the following formulas:

- z = Skewness/Std. Error
- z = Kurtosis/Std. Error

With a statistical significance level of .05 is assumed a z-score of ±1.98 demonstrates normality (Field, 2013; Kim, 2013). The ALQ, transparency, ethical,

balance and self-aware predictor variables measured skewness z outside the ±1.98 range of skewness normality. According to Kim 2013, histogram inspection and formal normality tests may show conflicting results. To overcome uncertainty z-tests provide a reliable quantitative means to assess normality.

Further examination showed that the ALQ confidence interval related to the skewness z value exceeds three standard deviations (99.7%). Three times the ALQ standard error of .22 = .66. The absolute skewness value of -.95 is greater than three times the standard error, which is an indicator of non-normal data. Additional formal testing was pursued to examine the normality of the ALQ predictor variables further.

Both the Kolmogorov-Smirnova and the Shapiro-Wilk formal normality tests produced $p < .05$, which demonstrated that ALQ and the subscale data was significantly skewed (Appendix K.). Attempts to yield more normal results through centering, a reflect and square root transformation, as well as a reflect and logarithmic transformation failed to produce acceptable results. The results indicated that the ALQ data for this study sample could not be entirely normally distributed. Table 25 shows the z scores aligned with the variable skewness and kurtosis statistics.

Table 25.

ALQ and Subscale Variable Skewness and Kurtosis

	ALQ	Transparency	Ethical	Balance	Self-Aware	RCS
N	121	121	121	121	121	121
Skewness	-.95	-.97	-1.10	-.70	-.84	.22
Skew *SE*	.22	.22	.22	.22	.22	.22
Skewness *z*	**-4.33**	**-4.41**	**-5.00**	**-3.19**	**-3.86**	**0.99**
Kurtosis	.99	1.51	1.18	-.19	.33	-.69
Kurt. *SE*	.44	.44	.44	.44	.44	.44
Kurtosis *z*	**2.24**	**3.19**	**2.70**	**-0.44**	**-.75**	**-1.57**

Note. Skewness z and Kurtosis z in boldface (Histograms with Kolmogorov-Smirnova and the Shapiro-Wilk test results shown in Appendix K).

RQ2 tests of assumptions. The eight assumptions of multiple linear regression clarified the relevance and applicability of RQ2 criterion and predictor data analysis. According to Laerd Statistics (2013), the eight assumptions of a multiple linear regression analysis include: (1) the criterion variable should be measured on a continuous scale; (2) There must be two or more continuous predictor variables; (3) there should be independence of observations demonstrated using a Durbin-Watson statistic test; (4) There must be a linear relationship between the criterion variable and each predictor variable, which a scatterplot will show; 5) the data must show homoscedasticity error variances for the variables; (6) The data may not show multicollinearity demonstrated through an inspection of correlation coefficients and tolerance/VIF values; (7) there should be no significant outliers very different to the value predicted by the regression equation; (8) residual errors are approximately normally distributed evidenced using a histogram and Normal P-Plot.

The four subscales of the predictor ALQ were Likert scale data satisfying the continuous data requirement of assumption one. The RCS as described RQ1 was continuous data satisfying assumption two. Assumption three was verified using a Durbin-Watson statistic test measuring 1.92, which examined whether adjacent residuals are correlated. The Durbin-Watson statistic can range from zero to four. According to Field (2013), a value below 2 indicates a positive correlation between adjacent residuals, a value above 2 indicates a negative correlation, while 2 indicates no correlation. Values below 1 or above 3 would show a significant violation of the assumption of independent errors. The 1.92 Durbin-Watson results exceed the Savin and White (1977) dL = 1.46.

There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.92.

Table 26 provides the model summary, which includes the Durbin-Watson Statistic.

Table 26.

RQ2 Model Summary^b Durbin-Watson Statistic

Model	*R*	R^2	Adjusted R^2	*SE*	Durbin-Watson
1	.19^a	.04	.002	.80	1.92

Note a. Predictors: (Constant), Self-aware, Ethical, Transparency, Balance
Note b. Dependent Variable: RCS_Mean

Assumption four asserts the need for a linear relationship between the predictor variables and the criterion variable as well as the criterion variables collectively. In an ideal linear depiction, the variable residuals would form a horizontal band. The residues in a nonlinear scatterplot would form a curve or funnel shape. A visual inspection of the ALQ subscale scatterplots showed no curvatures. There must be a linear relationship between the criterion variable and each predictor variable, which the scatterplots in Figure 8 depict.
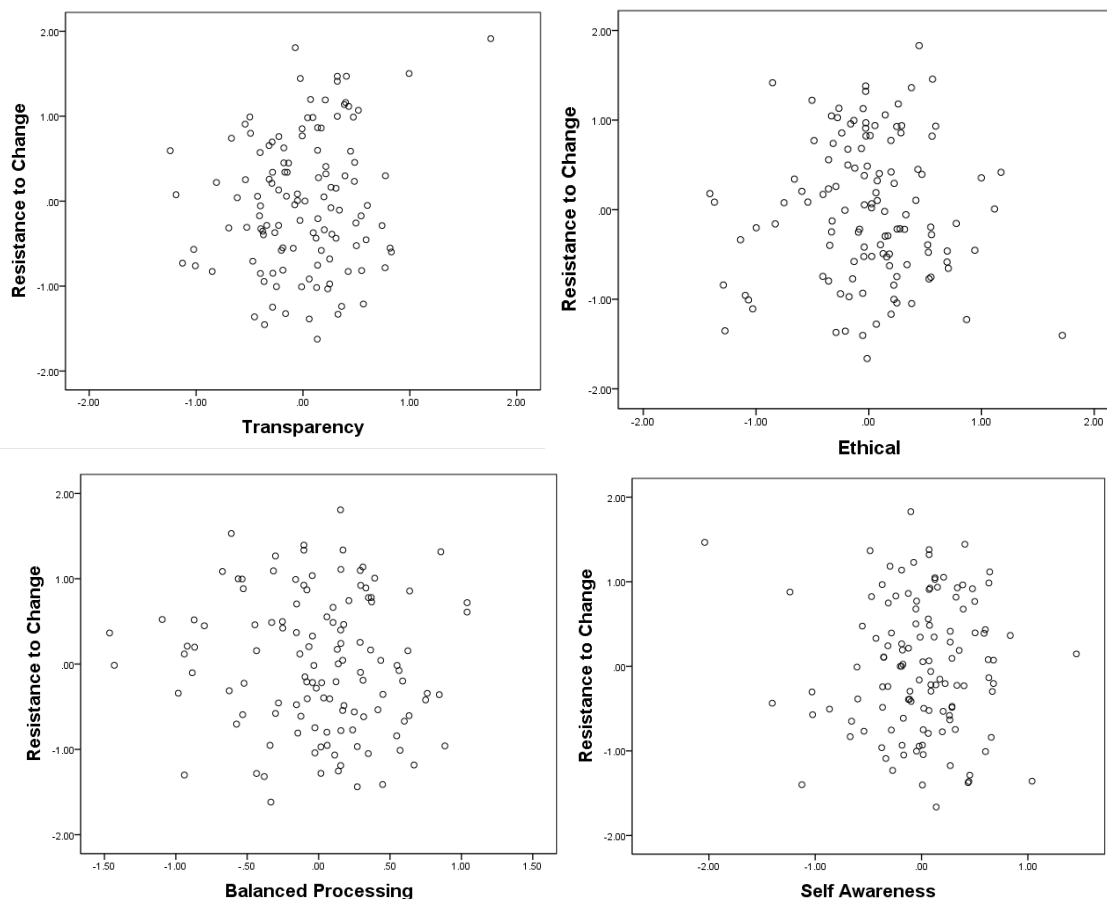
Figure 8. ALQ subscale scatterplots.

      Assumption five requires examination homoscedasticity. The assumption asserts that the residuals are generally equal across the predictions. An additional scatterplot was produced in SPSS based on the studentized residuals against the unstandardized predicted values. Plots reflective of fan or funnel shapes may not be characterized as homoscedastic. The scatterplot shown in Figure 9 gives evidence of homoscedasticity and the linearity of the criterion variable collectively.
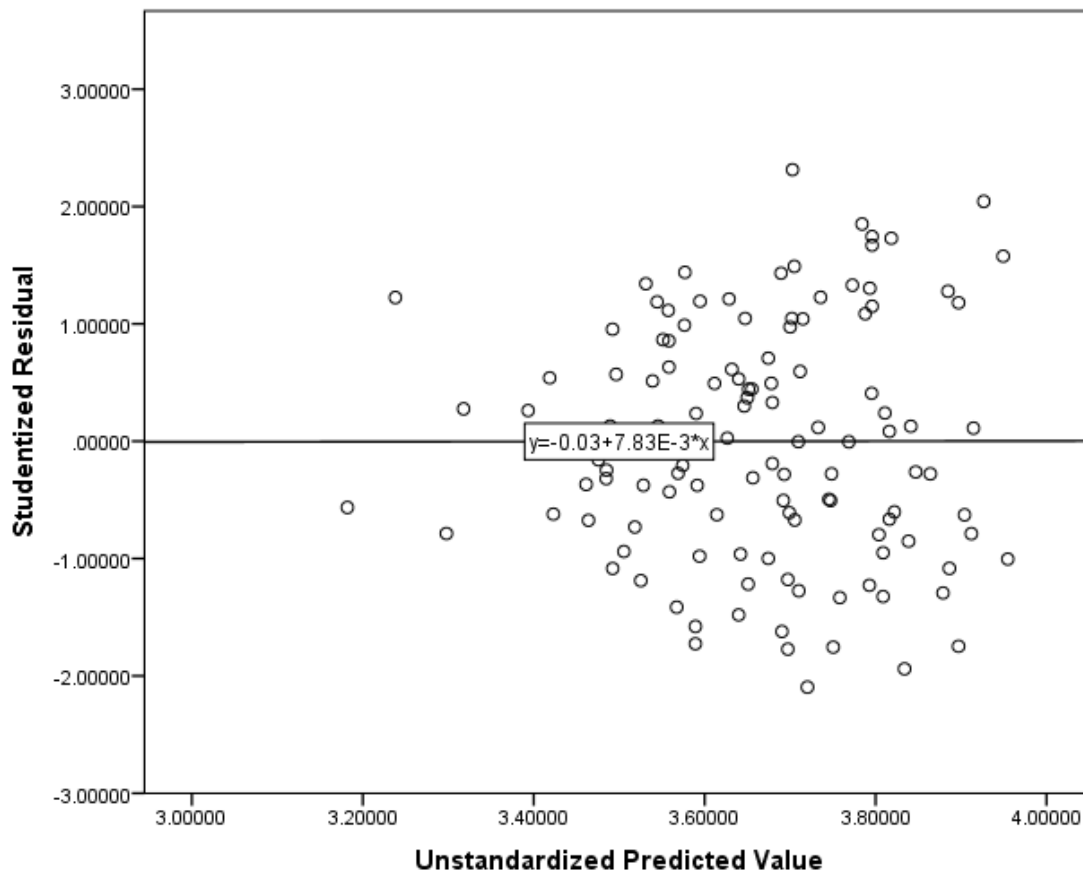
Figure 9. RQ2 homoscedastic scatterplot.

Assumption six asserts that the data may not show multicollinearity.

Multicollinearity exists when predictor variables are highly correlated. Correlation

coefficients, tolerance, and variance inflation factors (VIF) values produced in SPSS

provide measures for the assumption of multicollinearity. An evaluation of the correlation

coefficients produced by SPSS showed that none of the RQ2 predictor variables had

correlations > 0.70. According to Field (2013), if two predictors are perfectly correlated,

they would have a correlation coefficient of one. The perfect collinearity between

predictors would mean that the values of *b* of each variable would be interchangeable

making an estimate of the regression impossible. The more important multicollinearity

measure is the VIF and tolerance values. VIF is the reciprocal of tolerance value. A VIF

of greater than 10 or a tolerance value of less than 0.1, according to Laerd Statistics

(2013) would indicate a collinearity problem. Table 27 shows that the examined data

satisfies the assumption of collinearity demonstrated in the VIF and tolerance values.

Table 27.

RQ2 Coefficients and Collinearity Statistics

	b	SE	b*	t	p	LL	UL	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	3.26	.36		9.19	.00	2.56	3.96					
Transparency	.28	.15	.24	1.80	.08	-.03	.58	.16	.16	.16	.46	2.18
Ethical	.01	.14	.01	.08	.94	-.26	.28	.08	.007	.007	.47	2.11
Balance	-.13	.15	-.12	-.87	.39	-.42	.17	.03	-.081	-.08	.44	2.27
Self-aware	-.02	.15	-.02	-.13	.90	-.32	.28	.07	-.01	-.01	.40	2.51

Note. Dependent Variable: RCS_Mean

The seventh multiple regression assumption of outliers detected no outliers.

Studentized residuals were calculated, and the absolute values were plotted against the

observation numbers (Field, 2013) to identify outliers. Studentized residuals are

calculated by dividing the model residuals by the estimated residual standard deviation. A

significant observation may be characterized as a Studentized residual greater than 3.16

in absolute value, the .999 quartile of a t distribution with 120 degrees of freedom. The

diagnostics detected no outliers. Figure 10 presents the Studentized residuals plot of the
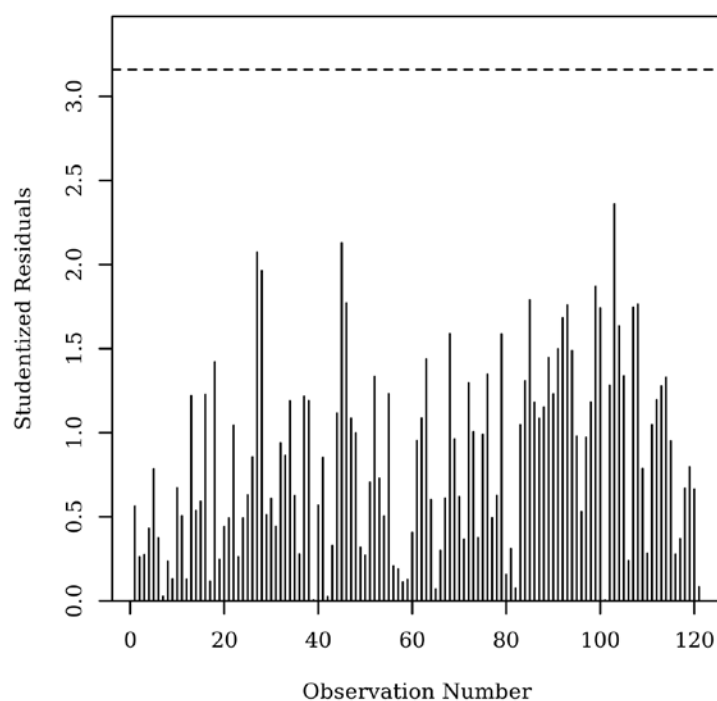
observations.

Figure 10. Studentized residuals plot for outlier detection.

The final assumption is one of normality. For the inferential statistics to have

meaning, ultimately expressed as significance, the prediction errors must be normally

distributed. A histogram and normal P-P plot illustrate the normality of error residuals.

An inspection of the illustrations showed the normality of the criterion variable. The

histogram generally reflects a bell-shaped curve. Normality can be assumed if the points

form a relatively straight line. The P-P plot shows the points approximately along the

diagonal line, reflective of a normal distribution. The curve and the P-Plot reflect a

normal bell-shaped distribution and alignment along the diagonal line as shown in
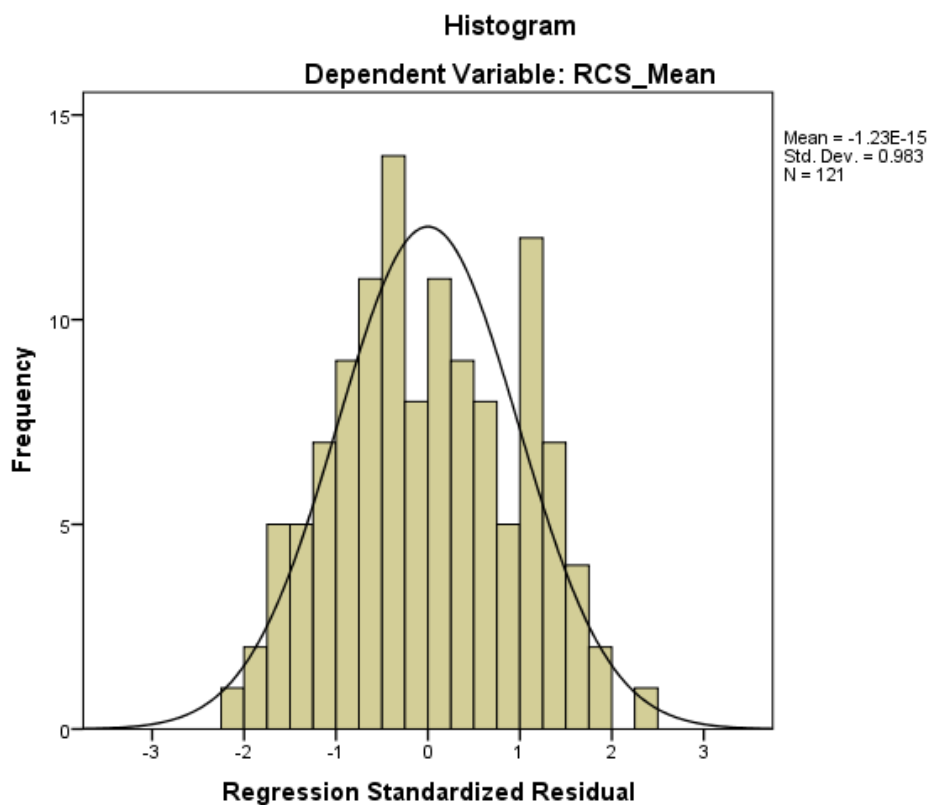
Figures 11 and 12.

Figure 11. RQ2 RCS histogram.

Normal P-P Plot of Regression Standardized Residual
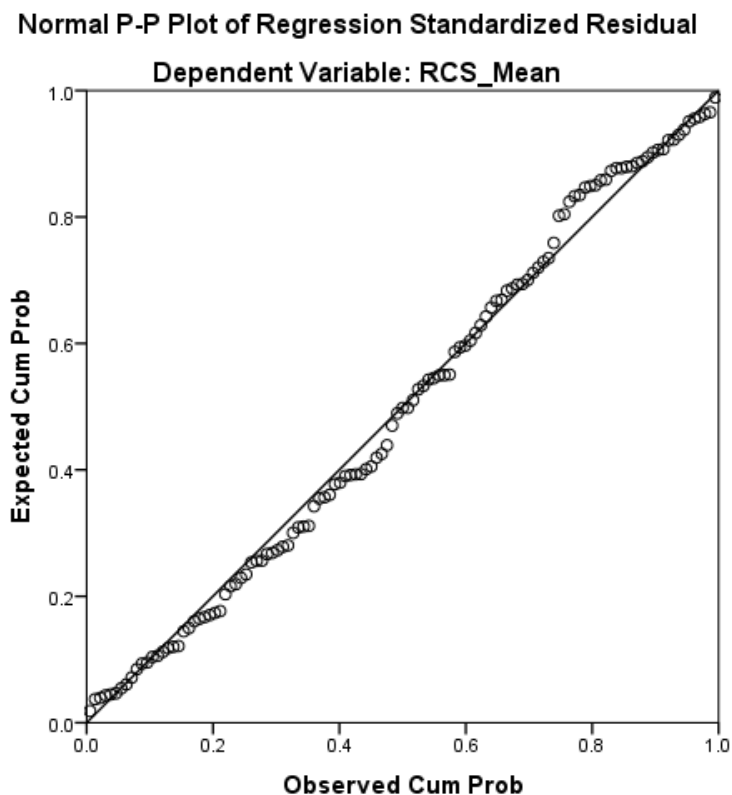
Dependent Variable: RCS_Mean

Figure 12. RQ2 RCS P-P plot.

The assumption of normality examines the residuals (errors) of the regression line

for a normal distribution. The survey results of the ALQ subscales showed a negative

skew. A calculation of the *z*-scores for skewness and kurtosis revealed normality

violations. Field (2013), Kim (2013), Laerd Statistics and others present the skewness z

test of normality as a valid quantitative statistical means of assessing skewness. The *z*

scores were calculated using the following formulas:

- z = Skewness/Std. Error

- z = Kurtosis/Std. Error

With a statistical significance level of .05 is assumed a z-score of ±1.98

demonstrates normality (Field, 2013; Kim, 2013). The transparency, ethical, balance and

self-aware predictor variables measured skewness *z* outside the ±1.98 range of skewness

normality. The transparency and ethical subscales of the ALQ showed kurtosis *z* violations outside of normal *z* score range as previously shown in Table 25. Additionally, both the Kolmogorov-Smirnova and the Shapiro-Wilk formal normality tests produced *p* < .05, which demonstrated that ALQ subscale data was significantly skewed (Appendix K). Attempts to yield more normal results through centering, a reflect and square root transformation, as well as a reflect and logarithmic transformation failed to produce acceptable results. The results indicated that the ALQ subscale data for this study sample could not be completely normally distributed.

RQ3 tests of assumptions. According to Laerd Statistics (2013), the eight assumptions of a moderator analysis with a dichotomous moderator include: (1) the predictor and criterion variable should be measured, interval or ratio, on a continuous scale; (2) the moderator variable must be dichotomous; (3) there should be independence of observations demonstrated using a Durbin-Watson statistic; (4) There must be a linear relationship between the criterion variable and the predictor variable, which a scatterplot will show; (5) the data must show homoscedasticity error variances for the variables; (6) The data may not show multicollinearity demonstrated through an inspection of correlation coefficients and tolerance/VIF values; (7) there should be no significant outliers very different to the value predicted by the regression equation; (8) a Shapiro=Wilk test for normality should show that the residual errors are approximately normally distributed.

The first assumption was satisfied given that the RCS criterion variable and the ALQ predictor variables were measured at the continuous level. Assumption two was validated by the PMP® certification moderation variable that was measured at the

dichotomous level (0, 1) satisfying the initial assumptions for moderator analysis. The moderator variable is technically another predictor variable in a multiple regression model. The emphasis of moderator examination differs from a multiple regression analysis in that it is viewed through the lens of the moderator effect. In this case, the examination will focus on the relationship in two different population groups PMP® certified and noncertified project managers.

Assumption three was verified using a Durbin-Watson statistic test, which examined whether adjacent residuals are correlated. The Durbin-Watson statistic can range from zero to four. According to Field (2013), a value below 2 indicates a positive correlation between adjacent residuals, a value above 2 indicates a negative correlation, while 2 indicates no correlation. Values below 1 or above 3 would show a significant violation of the assumption of independent errors. The 1.61 Durbin-Watson results exceed the Savin and White (1977) dL = 1.50. The test results mean that there was independence of residuals. Table 28 provides the model summary, which includes the Durbin-Watson Statistic.

Table 28.

RQ3 Model Summary[b] Durbin-Watson Statistic

Model	R	R^2	Adjusted R^2	SE	Durbin-Watson
1	.23[a]	.05	.04	.78	1.61

Note a. Predictors: (Constant), PMP, Zscore (ALQ_Mean)

Note b. Dependent Variable: RCS_Mean

Assumption four of linearity was established by visual inspection of a scatterplot of the variables. The graphic showed that there is evidence of a linear relationship. The trend is positive, meaning that larger measures of authentic leadership may be associated

with a greater disposition of resistance to change. The assumption of linearity was met.
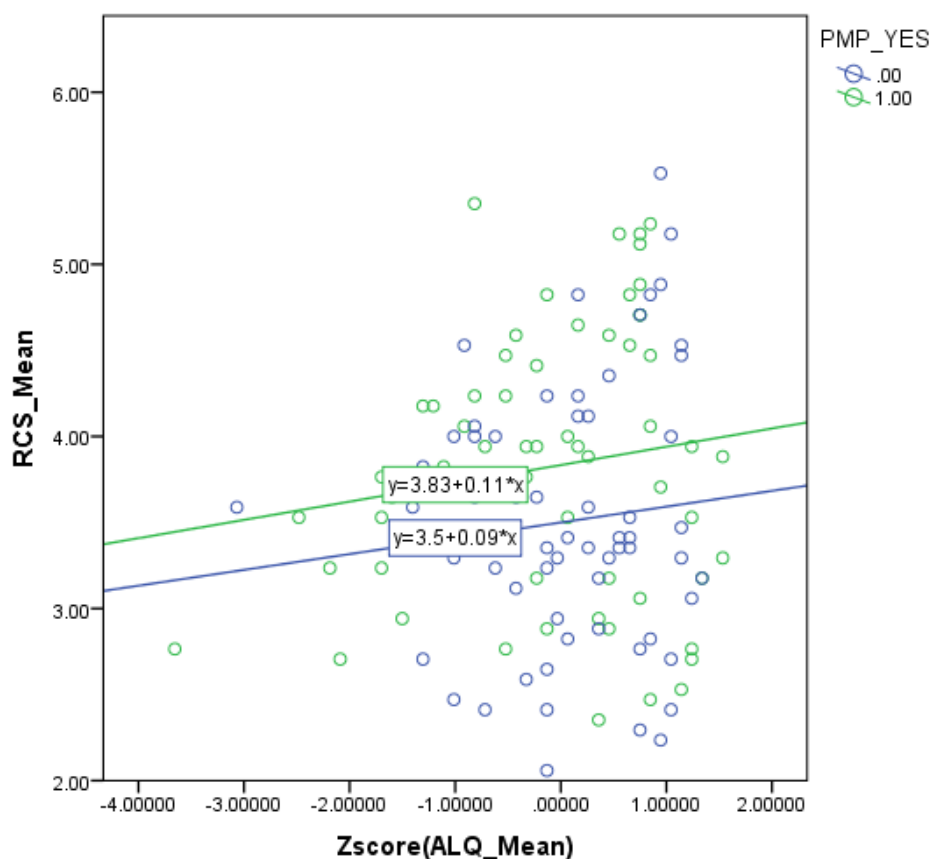
Figure 12 shows the scatterplot results.

Figure 13. RQ3 linearity scatterplot.

Assumption five examined homoscedasticity. The assumption asserts that the

residuals are generally equal across the predictions. A scatterplot of the studentized

residuals was examined to evaluate the assumption of homoscedasticity. There was

homoscedasticity, as assessed by visual inspection of the studentized residuals plotted

against the predicted values for PMP® and non-PMP® project managers. The graphics did

not show a fan shape or increasing or decreasing funnel shapes. The scatterplot shown in

figure 14 gives evidence of homoscedasticity and the linearity of the criterion variable
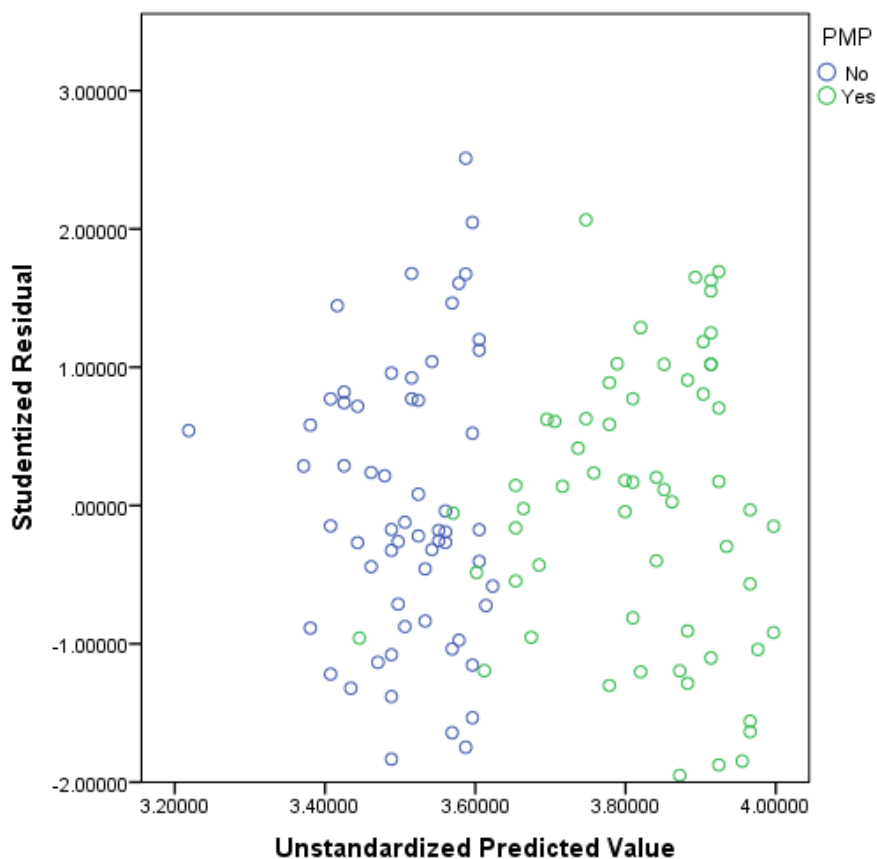
collectively.

Figure 14. RQ3 homoscedasticity scatterplot

Assumption six was a test for multicollinearity. There was no evidence of multicollinearity in the centered data, as evidenced by no tolerance values less than 0.3162 and no VFI greater than 2.76. Table 29 describes the coefficients. The Tolerance and VIF columns give evidence of the absence of multicollinearity.

Table 29.

RQ3 Coefficients and Collinearity Statistics

		b	*SE*	*b**	*t*	*p*	*LL*	*UL*	Tolerance	VIF
1	(Constant)	3.50	.10		34.80	.00	3.30	3.70		
	Zscore(ALQ_Mean)	.10	.07	.13	1.40	.16	-.041	.24	.99	1.01
	PMP_Yes	.33	.14	.21	2.33	.02	.05	.62	.99	1.01
2	(Constant)	3.50	.10		34.49	.00	3.23	3.70		
	Zscore(ALQ_Mean)	.09	.12	.12	.77	.44	-.14	.33	.36	2.76
	PMP_Yes	.33	.14	.21	2.32	.022	.05	.62	.99	1.01
	Interaction Yes	.014	.15	.01	.10	.92	-.28	.31	.37	2.74

Note. Dependent Variable: RCS_Mean

Assumption seven required an examination of the data for outliers. The studentized deleted residuals were inspected using the small group standard for residuals of greater than ± 2 standard deviations. There were three studentized residual cases greater than the deviation threshold. The data was then inspected for high leverage points. The leverage point threshold was calculated using the small group standard of 3*p/n* were *p* = number of parameters plus the intercept and *n* = number of observations (3 x 4/121) or 0.10. Two cases showed high leverage points that may represent unusual combinations of the predictor variables along the x-axis. Lastly, the data were inspected for influential cases that may alter the regression line. According to Laerd Statistics (2013), a Cook's distance value of above one is concerning. In this data set, there were no cases that violated a Cook's distance of one. The results of the data inspection are shown in Table 30.

Table 30.

RQ3 Outliers, Leverage Points, and Influential Cases

Case	Outlier Testing SRD_1	Leverage Point LEV_1	Influential Cases COO_1
1	**2.57**	.02	.053
2	**2.10**	.02	.03
3	**2.08**	.03	.04
41	.54	**.23**	.02
97	-.96	**.18**	.05

Note. SRD greater than ± 2 standard deviations, and LEV threshold leverage violations are in boldface. The five cases represent suspect outliers.

The three lines of data showing high studentized residuals (1,2, and 3) and the two data lines showing high leverage points (41 and 97), as shown in Table 20 were removed from the modeling, and the moderated multiple regression testing was run anew. The testing that excluded the outliers showed some movement towards significance. The model one ANOVA significance statistic moved from $p = .04$ to $p = .02$. The model two significance statistic moved from $p = .09$ to $p = .05$. The study sample of $N = 121$ exceeded the minimum RQ3 power analysis by 36% ($n = 77$). Given the robustness of power (.95), the more restrictive small residues and leverage point values used in this analysis, and that the model two results did not move to significance ($p < .05$), the outliers and leverage points were retained in the model to portray the sample accurately. Table 31 shows a comparison of the ANOVA significance.

Table 31.

ANOVA Significance Comparison

		Outlier Included					Outliers Excluded				
Model		Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean squares	F	Sig
1	Regression	4.16	2	2.08	3.39	.04[b]	4.39	2	2.20	3.97	.02[b]
	Residual	72.38	118	.61			62.58	113	.55		
	Total	76.54	120				66.97	115			
2	Regression	4.17	3	1.39	2.25	.09[c]	4.45	3	1.48	2.66	.05[c]
	Residual	72.37	117	.62			62.52	112	.56		
	Total	76.54	120				66.97	115			

Note a. Dependent Variable: RCS Mean
Note b. Predictors: (Constant), PMP®, Zscore (ALQ Mean)
Note c. Predictors: (Constant), PMP®, Zscore (ALQ Mean), Interaction No

Assumption eight called for an examination of normality. The assumption of normality was validated using a Sharpio Wilk's test. The studentized residuals were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). Table 32 shows the results of the normality examination.

Table 32.

RQ3 Sharpio Wilk's Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Studentized Residual	.06	121	.20[*]	**.99**	**121**	**.22**

Note. Shaprio-Wilk's results shown in boldface.

The results of each statistical test are presented next in the appropriate statistical format relative to the test type. Tables, graphs, and charts illustrate the results. The presentation of the results is organized according to each research question.

Results

The following results present a non-evaluative summary and analysis of the data. After calculating the descriptive statistics, testing assumptions, and conducting simple,

multiple, and moderator multiple regression analysis, the next phase of data analysis procedures involved completing the necessary inferential statistics. The following inferential analysis aligns with the order of the research questions.

RQ1 inferences. The results of the linear regression model were not significant, $F(1,119) = 1.30$, $p = .26$, $R^2 = 0.01$, indicating that authentic leadership did not explain a significant proportion of variation in resistance to change. An examination of the resulting R, and R^2 values provided perspective on the proportion of variance. In this case, $R = 0.10$, which suggested a weak, if any relationship between authentic leadership and resistance to change. R^2 is the proportion of variation explained by the sample model. In the sample $R^2 = 0.01$ describes that the predictor variable explains 1.1% of the variability in the criterion variable.

The ANOVA regression model results showed no statistically significant relationship between the authentic leadership predictor variable and resistance to change criterion variable. In order to achieve significance, the F model must express a $p < .05$. Given that the results of the linear regression model were $F(1,119) = 1.30$, $p = .26$, $R^2 = 0.01$, the null hypothesis was accepted. Table 33 shows the results of the ANOVA regression modeling.

Table 33.

RQ1 ANOVA Regression Modeling

Model		SS	df	MS	F	p
1	Regression	.83	1	.83	1.30	.26[b]
	Residual	75.71	119	.64		
	Total	76.54	120			

Note. Dependent Variable: RCS_Mean. Predictors: (Constant), ALQ Mean

In sum, a linear regression was conducted to understand the effect of authentic leadership on resistance to change in a sample of project managers. A scatterplot of the ALQ against RCS survey data with superimposed regression line was plotted to assess linearity. Visual inspection of the scatterplot suggested a linear relationship between the variables. There was evidence of homoscedasticity, as previously shown in Figure 6, and normality of the residuals, as shown in Figures 7 and 8. Since the overall model was not significant as evidenced by a $p = 0.26$, the predictor variable was not examined further. The null hypothesis was accepted:

H_{01}: There is no statistically significant relationship between authentic leadership and resistance to change.

RQ2 inferences. The four hypotheses (H_2–H_5) were examined collectively through a multiple regression analysis. The 'Enter' variable selection method was chosen for the linear regression model, which enters all predictor variables into the model simultaneously. The multiple regression created a linear combination of self-awareness, internalized moral perspective, transparency, and balanced processing, to predict resistance to change in the sample of project managers. The test model R^2 statistic, which represents the amount of variance of all four variables collectively, was used to assess how well the regression predicted the dependent variable.

An examination of the resulting R, R^2, and adjusted R^2 Square values provided perspective on the proportion of variance accounted for by all four variables. In this case, $R = 0.18$, which suggested a weak, if any relationship among the variables. R^2 is the proportion of variation explained by the sample model. The proportion of variance accounted for by all four predictors together, in the sample is $R^2 = 0.04$. The R^2 adjusted

value, according to Laerd Statistics (2013), corrects positive bias so that the adjusted

value represents the expected results in the population. In this case R^2 adjusted = 0.002.

This means that less than 1% of the variance in resistance to change may be attributed to

the predictor variables. Table 34 summarizes the R statistics.

Table 34.

RQ2 R Statistics Modeling

Model	R	R^2	Adjusted R^2	SE	Durbin-Watson
1	.19[a]	.04	.002	.80	1.92

Note. Criterion Variable: RCS Mean. Predictors: (Constant), Self-aware, Ethical, Transparency, Balance.

The ANOVA results from the multiple regression model showed no statistically

meaningful relationship between the predictor variables of leader self-awareness,

internalized moral perspective, transparency, and balanced processing and the criterion

variable of resistance to change. The results of the linear regression model were not

significant, $F(4,116) = 1.07$, $p = .38$, $R^2 = 0.04$, indicating Relational transparency,

internalized moral perspective, balanced processing and self-awareness did not explain a

significant proportion of variation in resistance to change as shown in Table 35.

Table 35.

RQ2 ANOVA[a] Regression Modeling

Model		SS	df	MS	F	p
1	Regression	2.72	4	.68	1.07	.38[b]
	Residual	73.82	116	.64		
	Total	76.54	120			

Note. Dependent Variable: RCS_Mean, Predictors: (Constant), Self-aware, Ethical, Transparency, Balance

Given that significance cannot be inferred the following null hypothesis was

accepted:

H$_{02}$: There is no statistically significant relationship between self-awareness and resistance to change.

H$_{03}$: There is no statistically significant relationship between relational transparency and resistance to change.

H$_{04}$: There is no statistically significant relationship between internalize moral perspective and resistance to change.

H$_{05}$: There is no statistically significant relationship between balanced processing and resistance to change.

In sum, a multiple regression was run to predict resistance to change from the ALQ subscales of self-awareness, internalized moral perspective, balanced processing, and transparency. There was evidence of linearity displayed in partial regression plots and a plot of studentized residuals against the predicted values. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.92. There was homoscedasticity show in the plot of studentized residuals versus unstandardized predicted values, and there was no evidence of multicollinearity. The assumption of normality was met. The results of the linear regression model were not significant, $F(4,116) = 1.07$, $p = .38$, $R^2 = 0.04$, indicating that the predictor variables of self-awareness ($b = -0.02$, $p = .90$), internalized moral perspective ($b = 0.01$, $p = .94$), balanced processing ($b = -0.12$, $p = .39$), and transparency ($b = 0.24$, $p = .08$), did not explain a significant proportion of variation in the resistance to change criterion variable. Since the overall model was not significant, the individual predictors were not examined further. Table 36 summarizes the results of the regression model.

Table 36.

RQ2 Regression Model Results

Variable	*b*	*SE*	95% CI	*b**	*t*	*p*
(Intercept)	3.26	0.35	[2.56, 3.96]	0.00	9.19	< .05
Transparency	0.28	0.15	[-0.03, 0.58]	0.24	1.79	.08
Ethical	0.01	0.14	[-0.26, 0.28]	0.01	0.08	.94
Balance	-0.13	0.15	[-0.42, 0.17]	-0.12	-0.87	.39
Self_Aware	-0.02	0.15	[-0.32, 0.28]	-0.02	-0.13	.90

Note. Results: $F(4,116) = 1.07$, $p = .38$, $R^2 = 0.04$, Unstandardized Regression Equation: RCS_Mean = 3.26 + 0.28*Transparency + 0.01*Ethical - 0.13*Balance - 0.02*Self_Aware

RQ3 inferences. A moderator multiple regression was run to assess the increase in variation explained by the addition of an interaction term between authentic leadership and resistance to change. PMP® certification did not moderate the effect of authentic leadership behaviors on the disposition of resistance to change in project managers, as evidenced by an increase in total variation explained by a R^2 change of zero, which was not statistically significant ($F(3, 117) = .009$, $p = .92$) as shown in Table 37.

Table 37.

RQ3 Model Summary

Model	*R*	R^2	Adjusted R^2	*SE*	R^2 Change	*F* Change	*df1*	*df2*	Sig. *F* Change
1	.23[a]	.05	.038	.78	.05	3.39	2	118	.04
2	.23[b]	.05	.030	.79	.00	.009	1	117	.92

Note a. Predictors: (Constant), PMP_Yes, Zscore(ALQ_Mean)

Note b. Predictors: (Constant), PMP_Yes, Zscore(ALQ_Mean), Interaction Yes

Note c. Dependent Variable: RCS_Mean

The testing results provide details about the results of the Moderator Multiple Regression testing. The model one PMP® predictor results of the moderator linear

regression were significant, $F(2,118) = 3.39$, $p = .04$, $R^2 = 0.05$, indicating that approximately 5% of the variance in the resistance to change variable is explainable by the authentic leadership predictor variable and the PMP® dichotomous predictor variable. The results demonstrate that PMP® certification has a significant positive relationship with resistance to change ($b = 0.33$, SE = 0.14). The beta coefficients ($b* = .21$, p < .05). indicated a positive impact on resistance to change (negative beta coefficients would mean a negative, or inverse, impact on resistance to change). Those having PMP® certification are more resistant to change (5%) than those who were not PMP® certified.

The second step of the model summary shows that the interaction term (PMP_Yes, Zscore(ALQ_Mean), did not significantly predict the resistance to change criterion variable, $F(3,117) = .009$, $p = .92$, $R^2 = 0.00$, Based on this sample, an increase in the authentic leadership variable does not have a significant effect on the resistance to change criterion variable. PMP® certification significantly predicted the resistance to change criterion variable ($p = .04$). The ANOVA regression model results showed no statistically significant relationship in the interaction term modeling (model 2). The overall moderator multiple regression testing was not statistically significant, $F(3, 117) = 3.39$, $p = 0.09$. In order to achieve significance $p < .05$. Table 38 shows the results of the ANOVA regression modeling.

Table 38.

RQ3 ANOVA[a] Summary

Model		SS	df	MS	F	p
1	Regression	4.16	2	2.08	3.39	.04[b]
	Residual	72.38	118	.61		
	Total	76.54	120			
2	Regression	4.17	3	1.39	2.25	.09[c]
	Residual	72.37	117	.62		
	Total	76.54	120			

Note. Criterion Variable: RCS_Mean, Predictors: (Constant), PMP_Yes, Zscore(ALQ_Mean)

Linear regression was conducted to understand the effect of authentic leadership on resistance to change in a sample of project managers. Since the overall model was not significant as evidenced by $p = 0.09$, the predictor variable was not examined further, and the null hypothesis was accepted.

There is no statistically significant relationship between authentic leadership and resistance to change.

The moderator multiple regression was run to assess the statistical significance of the interaction term between authentic leadership and resistance to change. There was not a statistically significant moderator effect on the interactions of the predictor variables of authentic leadership and PMP® certification, as shown in Tables 43 and 44 model two. Given that inferential significance was not achieved the following null hypothesis was accepted:

H_{06}: PMP® certification does not serve as a statistically significant moderator for authentic leadership and resistance to change.

In sum, a simple linear regression was conducted to understand the effect of authentic leadership on resistance to change in a sample of project managers. Given that

the results of the linear regression model were $F(1,119) = 1.30$, $p = .26$, $R^2 = 0.01$, the null hypothesis was accepted. There is no statistically significant relationship between authentic leadership and resistance to change. Multiple linear regression was conducted to understand the effects of self-awareness, relational transparency, balanced processing and internalized moral perspective on resistance to change in a sample of project managers. The results of the linear regression model were not significant, $F(4,116) = 1.07$, $p = .38$, $R^2 = 0.04$, indicating that the predictor variables of self-awareness, internalized moral perspective, balanced processing and transparency, did not explain a significant proportion of variation in the resistance to change criterion variable. Lastly, the moderator multiple regression was run to assess the statistical significance of the interaction term between authentic leadership and resistance to change. There was not a statistically significant moderator effect on the interactions of the predictor variables of authentic leadership and PMP® certification $F(1, 117) = .009$, $p = .09$) PMP® certification does not serve as a statistically significant moderator for authentic leadership and resistance to change. The next section of this chapter will summarize the statistical data and results of statistical tests in relation to the research questions. Additionally, a description of limitations and an introduction to Chapter 5 will close the data analysis and results chapter.

Summary

In sum, there are no statistically significant relationships between resistance to change and authentic leadership including the ALQ subscales of self-awareness, internalized moral perspective, transparency, and balanced processing. PMP® certification did not moderate the relationship between authentic leadership and

resistance to change in the study sample. All six of the null hypotheses were accepted. This examination revealed a statistically significant relationship between PMP® certification and resistance to change. The relational revelation showed that there was a statistically significant positive linear relationship ($b = 0.33$, SE $= 0.14$) between the RCS criterion variable and PMP® certification ($p = .04$). The results of the regression indicated that the PMP® certification predictor explained 5% of the variance in the resistance to change variable ($F(2,118) = 3.39$, $p = .04$, $R^2 = 0.05$).

Limitations that emerged in this study included the negatively skewed authentic leadership data. While several attempts were made to ameliorate the skewness, the efforts did not yield significance between the variables. The significantly skewed responses reflected a very authentic self-perception of the project managers surveyed. It appeared the small variance in the ALQ responses may have foiled correlations in a significant manner. The skewness limitation may also have contributed to a variability limitation of ALQ scores in the sample responses. The 25th and 75th quartiles of the ALQ scores equaled 2.63 and 3.50. The middle 50% was limited to a range of .87. Relation transparency was limited to .80, internalized moral perspective, balanced processing, and self-awareness were similarly limited to a range of 1. Table 39 summarizes the quartile statistics of the ALQ examination, which delineate the limitation.

Table 39.

Interquartile Limitation

	ALQ	Transparency	Ethical	Balance	Self-Aware
N	121	121	121	121	121
25th %	2.63	2.60	2.75	2.67	2.50
75th %	3.50	3.40	3.75	3.67	3.50

The skewed nature of the authentic leadership scores appeared to limit the ability to detect statistically significant relationships throughout the study tests. The nature of the authentic leadership responses points to another limitation of this sample. The self-reported nature of the responses to the questions may have influenced the results. Despite the survey instructions, those who responded could have revealed more about an idealistic disposition than a reflection of their typical leadership behaviors. If so, the idealism could have further limited the response accuracy.

It appears that those project managers who exercise the tenants of authentic leadership are no less immune to the disposition of resistance to change. Additionally, it is now clear that PMP® certification did not moderate the relationship between the two constructs of authentic leadership and resistance to change. First, the regression test summary, as shown in Table 35, showed that the that the PMP® certification predictor explained 5% of the variance in the resistance to change variable ($F(2,118) = 3.39$, $p = .04$, $R^2 = 0.05$). The model two interaction term (PMP_Yes x ALQ), as shown in Table 35, was not significant ($p = .92$). The overall moderated multiple regression results shown in the ANOVA summary (Table 36) were not significant ($p = .09$). Since the overall model was not significant the predictor variables were not examined further, and the null hypothesis was accepted.

Chapter 5 will present the conclusions, implications, and resulting recommendations through a comprehensive summary of the study framework.

Chapter 5: Summary, Conclusions, and Recommendations

The rate of change in today's globalized organizations creates unprecedented resistance to change that leaders must continuously mitigate. Van den Heuvel and Schalk (2015) observed that over the last decade the degree of ongoing globalization had driven a significant increase in resistance to change into the workplace. Today's organizational leaders confront the freezing effects of resistance to change on a regular basis (García-Cabrera & García-Barba Hernández, 2014; Jost, 2015), which creates substantial obstacles to leadership effectiveness. This chapter will present the summary, conclusions, and recommendations as they relate to the problem presented in this study.

Introduction and Summary of Study

Effective leadership appears critical to organizational success, yet a myriad of change factors can induce resistance to change in organizational leaders. Malik and Masood (2015) observed that resistance to change and positive psychological capital are dueling factors in today's workforce that requires keen leadership acumen. Authentic leadership is a positive psychological approach to organizational leadership (Wang et al., 2014) that may effectively meet the challenges of today's fast-paced work environment where resistance to change flourishes. In a world of stressful project-based work where time is of the essence, negating resistance to change appears key to leadership effectiveness. This study addressed ten strategic points in light of the organizational challenge of resistance to change that project leaders face.

The ten points included a broad topic area, a synopsis of literature review, the problem statement, research questions, a sample description, variables and hypothesis, methodology and design, the purpose statement, and finally the data collection approach

and analysis. The following summary of the study provides a comprehensive synopsis of the strategic points framework. Following the ten point review provides a summary of the findings and conclusions as well as following implications and recommendations.

Topic. The broad topic of this study was the relationship between authentic leadership and resistance to change in project managers. A project-based approach to work activities dominates today's globalized work environment. Pinto (2013, 2014) asserted that organizations now use projects to focus today's work environments on corporate goal achievement. Packendorff et al. (2014) recommended that studies should now focus on how everyday project leadership traits and activities influence social dynamics such as resistance to change. It appears that specific leadership competencies could influence resistance to change. A synopsis of the literature review will further explain the essence of this vital topic.

Literature review. Before this research the relationship between authentic leadership and resistance to change was unclear. Bakari and Hunjra (2017) asserted that authentic leadership positively related to championing change behaviors but were uncertain of effects on resistance to change. According to Dunican and Keaster (2015), the impact of resistance to change has increased in today's competitive market in a manner that leaders must recognize and address. Lines, Sullivan, Smithwick, and Mischung (2015) further observed that project leaders must focus on resistance to change or risk project failure. Other researchers such as Lundy and Morin (2013) studied project leadership and resistance to change using Dulewicz and Higgs'(2005) transformational leadership framework resulting in a recommendation of further research relative to the organizational effects of resistance to change using other mainstream leader models.

Wang et al. (2014) observed that authentic leadership is a widely-recognized approach to organizational leading while Alavi and Gill (2017) proposed that authentic leadership has the potential to enhance positive organizational effectiveness.

The framework of this study was built on the seminal foundation of Luthans and Avolio's (2003) positive psychology conceptualization of authentic leadership. The disposition of resistance to change in project managers bounded the study. Focusing on the leader aspect of authentic leadership the study utilized Meyer and Allen's (1991) seminal organizational commitment theory (OCT) as a guiding theory. The theory of organizational commitment suggests that the interplay of behavior, conditions, and psychological state influence organizational dynamics. Leroy et al. (2012) observed that authentic leadership behaviors drive organizational commitment by aligning words and actions, which in turn facilitates adaptations. In the same way, this study sought to objectively clarify through the lens of OCT if the authentic leadership behaviors mitigate the psychological state of resistance to change, given the condition of specific project management certifications.

With the increasing rate of change in businesses, understanding leader effects upon resistance to change in the society of project managers appears vital to organizational effectiveness. Maqbool et al. (2017) advocated for further research on the relationship of leadership competencies to the impacts upon project work. Lundy and Morin (2013) concluded that leadership and formal project management methodologies are instrumental in reducing resistance to change. The PMP® certification is a professional credential in a formal project management methodology. The credential may provide a project manager with professional credibility, but further evidence of the

certifications moderating effects, if any, between authentic leadership and resistance to change could enhance extant observations.

Topically, Packendorff, Crevani, and Lindgren (2014) researched project leadership and organizational change. The researcher described the essence of leading projects as a behavioral process more so than a procedural formula. Showing the need for further study, the researchers described leadership as a series of social activities. If the traits of authentic leadership represent social competencies, then a research gap appears to emerge. A gap exists in the understanding of the relationship between the positive behaviors of authentic leadership and the psychological state of resistance to change.

Gap statement. Researchers have not sufficiently studied the relationship between authentic leadership and resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. Based on the described gap a problem statement was formed.

Problem statement. It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. Given that change is a persistent process in organization's today, Nixon (2014) explained that mitigating resistance is a continuous leadership task. Finding the optimum leadership approach requires examination of new leadership constructs. Fusco et al. (2016) observed that authentic leadership is a new leadership construct in the emergent stages of

development. As the authentic leadership model further develops, studies such as this one on its relationship to resistance to change will further the body knowledge.

Research questions and hypothesis. This research examined if a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator. The predictor variables in this study were authentic leadership and its multidimensional components of leader self-awareness, relational transparency, internalized moral perspective, and balanced processing, as measured by the ALQ (Walumbwa et al., 2008). The criterion variable in this study was resistance to change, a tendency or reaction to avoid, suppress, and devalue the positive possibilities of change. The moderating variable in this study will be PMP® certification, a professional certification of project managers offered through the PMI. The PMI tests candidates against published Project Management Body of Knowledge. The conceptual and operational definitions of each variable, as well as the unit of measure further support the research questions and hypothesis.

Walumbwa et al. (2008) provided a conceptual definition of authentic leadership as a higher order construct of ethical leadership that is composed of four factors that include self-awareness, relational transparency, internalized moral perspective, and balanced processing. Datta (2015) observed that researchers frequently measure authentic leadership using the ALQ, which Walumbwa et al. (2008) operationalized and validated. An interval five-point Likert scale forms the unit of measure for the ALQ. Oreg (2003) conceptually defined resistance to change as a higher order resistive disposition characterized by the four factors of routine seeking, emotional reaction to imposed

change, short-term focus, and cognitive rigidity. Oreg (2003) produced a means to operationalize resistance to change through the RCS, which uses an interval six-point Likert scale ranging from 1 (strongly disagree), to 6 (strongly agree) as a unit of measure. The moderating variable of PMP® certification may be conceptually defined as a tested professional credential that is based upon the PMI Project Management Body of Knowledge ("PMBOK®," 2017). For this study, PMP® certification was operationalized using a yes or no interval survey question.

The first question examined the higher order construct of authentic leadership in relationship to resistance to change. The second research question: Do each of the four authentic leadership components significantly predict resistance to change further supported the problem statement. The second question called for a discrete examination of the four authentic leadership dimensions of self-awareness, relational transparency, internalized moral perspective and balanced processing in relationship to resistance to change. The third research question: To what extent, if any, does certification serve as a moderator for authentic leadership and resistance to change provides a practical organizational dimension to the investigation. Together the three questions addressed toughly the stated problem: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change.

Sample and location. The survey population for this study consisted of project managers in the United States. One half of the sample included PMP® certified project managers, and the other half were not PMP® certified. A power analysis addressed linear regression, multiple linear regression as well as moderated multiple regression using G*Power.

This study required a minimum sample size of N = 85. According to Faul et al. (2009), G*Power is a reliable statistical power analysis computer application suitable for social science research. The total number of tested predictors for RQ1 = 1. The total number of tested predictors for RQ2 = 4. The total number of tested predictors for RQ3 = 2. The significance was set at $p < .05$ and power was set at .80. The effect size was medium, $f2 = .15$. Given that the sample size threshold for this study was 85, an excess of 36 responses ensured sample quality while contributing to a robust post hoc power values (Appendix I).

Methodology and design. This research used a quantitative methodology in a non-experimental fashion. As described by Delost and Nadder (2014) quantitative methodology facilitates a deductive approach that tests concepts, variables, and hypotheses. For this study, the researcher used an objective approach free from interventions to examine the potential relationships. The work sought to discover empirical observations and patterns in variables that may show relationships through a correlational design.

The objective of correlational research design is to evaluate interval variables for relationships. According to Puth et al. (2015), correlation designs test relationships among interval variables. Only non-experimental designs were considered for this study because the experimental treatment effects of groups were not central to the research. Given that a causal-comparative design determines the causes of differences rather than establishing the relationships between variables, the correlation design appeared the best means to discover relationships through the measurement of bivariate variables.

Purpose statement. The purpose of this quantitative correlational research was to determine what, if any, relationship exists between authentic leadership and resistance to change within a sample of project managers in the United States and whether PMP® certification significantly moderates the relationship between these two constructs. It appears that human beings consistently show a propensity for custom and tradition over progressive change (Jost, 2015). Over time, a legacy of researchers (Kotter, 2012; Lewin, 1951) recognized resistance as a critical barrier to change. As described in the benchmark work of Coch and French (1948), resistance to change includes a combination of individual reactions to frustration coupled with strong group identity.

Data collection approach. For this study, Qualtrics LLC, an online survey organization, provided the data collection services. Qualtrics LLC services identified the population of project managers and collected their data accordingly. The entire process was carried out through electronic means, so the researcher had no direct contact with the survey participants. The online means of data collection gained many project managers quickly. Weigold et al. (2013) summarized that paper-and-pencil and internet data collection processes generally produce equivalent results. The electronic data collection process provided fast responses and enhanced participant anonymity.

Data analysis approach. The data analysis approach was grounded in the tests of assumptions, statistical processing, and results analysis as described in Laerd Statistics (2013). The descriptive statistical analysis of interval data helped to show patterns and describe the nature of the information. Demographic data characterized the population and its associated data. Research question one was examined using a simple linear regression analysis to evaluate the significance of authentic leadership as a predictor of

resistance to change in project managers. Research question two was evaluated using a multiple linear regression analysis to examine the variance of the four-factor authentic leadership model and the relative contribution of each of the predictor variables in relationship to resistance to change. According to Laerd Statistics (2013) adding an interaction term in a multiple regression model determines if a moderating effect exists, which Aguinis (2004) referred to as a moderated multiple regression (MMR). PMP® certification served as a moderator variable relative to authentic leadership and resistance to change as research question three was examined. The importance of this study and its design contributes to the body of knowledge and understanding of the relationship between authentic leadership and resistance to change in project managers.

The understanding of the effects of authentic leadership behavior to resistance to change in project managers appeared a compelling research advancement. As early as 2011, Lloyd-Walker and Walker recommended studies on the relationships between authentic leadership and managing projects. Bakari et al. (2017) further described the importance of resistance to change, concluding that future research should investigate the role of authentic leadership in the development of change related behaviors. In light of the research trajectory, the results of this research may influence how organizations train and equip project managers.

The remainder of this chapter will provide a summary of the findings and conclusions from the data analysis. The problem statement: It was not known if or to what extent a relationship exists between authentic leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator, will be addressed research question by research

question. The implications and recommendations generated from the study of the problem and its associated research questions conclude Chapter 5.

Summary of Findings and Conclusion

This section presents the findings of the study in response to the research questions and hypothesis. Based on the analytics and results, conclusions will be presented as well. The summary of findings and conclusions will place the analysis in context to prior research on the topic (Chapter 2) while providing a cogent discussion on how the study advances research on leadership and resistance to change. Packendorff et al. (2014) recommend that others should study leadership concerning process and social interactions to understand the dynamics between project management and change. This study, in turn, focused on the dynamics of authentic leadership, formal project management methodology in the form of PMP® certification, and resistance to change.

This study aimed to contribute to the body of knowledge on resistance to change and the authentic leadership model as discussed in the first chapter. The significance of this study was to provide empirical data to project management professionals and organizations that employ them. Prior research focused on the effects of transformational leadership traits on project professionals (Lundy, & Morin, 2013) and the need to understand better if formal project management methodology effectively reduced resistance to change. According to Lundqvist and Marcusson (2014), it is vital that project managers lead projects according to the kind connected and coherent activities that the PMP® certification fosters. This study addressed how authentic leadership and its multidimensional components may have related to resistance to change, as well as how PMP® certification may have moderated between the two constructs.

The predictor variables utilized in this study included authentic leadership and its four underlying theoretical dimensions of self-awareness, relational transparency, balanced process, and internalized moral perspective. The moderator variable of PMP® certification contributed a practical element in the study and the criterion variable for all hypothesis was resistance to change. According to Wang et al. (2014), authentic leadership is a "positive, genuine, transparent, ethical form of leadership" (p. 5.) that includes self-awareness, relational transparency, ethics in the form of internalized moral perspective, and balanced processing.

The second question focused on the four dimensions of authentic leadership in relationship to resistance to change. Srivastava and Jaiswal (2015) described the extent to which a person is aware, or has knowledge of, personal values and thoughts as self-awareness. Datta (2015) asserted that relational transparency refers to how a person shows their authentic self over an artificial or distorted self, to others. Meng et al. (2016) described internalized moral perspective as the leader trait that produces decisions based on objectively high ethical standards, rather than self-serving, subjective behaviors. According to Alavi and Gill (2017), the ability to consider diverse perspectives, free of personal bias, in the process of decision making depends upon balanced processing. The last question added a moderating dimension to the study.

The third question examined the moderating effects of PMP® certification between the constructs of authentic leadership and resistance to change. The PMP® certification is a tested process of a formal project management methodology produced by the Project Management Institute (PMI). The PMI based the PMP® certification upon the Project Management Body of Knowledge ("PMBOK®," 2017). Each question in this

study juxtaposed the predictor variables against the criterion variable of resistance to change. Resistance to change generates from the frozen attitudes formed by tradition and repetition (Jost, 2015). The three research questions examined potential relationships between the various variables.

Research question 1. The first research question: To what extent, if any, does authentic leadership predict resistance to change, directly supports the problem statement, which is that it was not known if or to what extent a relationship exists between authentic leadership and resistance to change.

> H_{01}: There is no statistically significant relationship between authentic leadership and resistance to change.
>
> H_{1a}: There is a statistically significant negative relationship between authentic leadership and resistance to change.

The first question examined the higher order construct of authentic leadership in relationship to resistance to change. As described in Chapter 2, Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. They recommended scholars should further investigate authentic leadership to test its importance in predicting resistance to change and to provide clarity on this problem. The data analytics expressed the F model as $F(1,119) = 1.30$, $p = 0.26$, which showed no statistical significance. In order to achieve significance $p < .05$. The results of this study demonstrated that there is no relationship between authentic leadership and resistance to change though extant literature questioned the possibility.

Other studies described in the Literature Review (Chapter 2) described the potential of reducing the disposition of resistance to change through authentic leadership behaviors. This study addressed the potential relationship, but the results did not reflect the proposed relationship consistent with similar research. Fallatah et al. (2017) demonstrated the positive effects of authentic leadership on organizational identification. Wang et al. (2014) observed that authentic leadership generates positive psychological capacities while establishing willpower. While the relationship between the forces of authentic leadership and resistance to change was not clear, the resulting positive psychological resources of authentic leadership showed potential to impact resistance to change.

The trajectory of leadership research as described in the Literature Review, pointed to the challenge of resistance to change. Bakari and Hunjra (2017) found that authentic leadership positively related to championing change behavior but were uncertain of effects on resistance to change. In response, this study measured but did not find a significant relationship between the high-level constructs of authentic leadership and resistance to change in a sample of project managers in the United States. The finding validated the null hypothesis. There is no statistically significant relationship between authentic leadership and resistance to change.

Research question 2. The second research question: Do each of the four authentic leadership components significantly predict resistance to change, further supported the problem statement. The second question called for a examination of the four authentic leadership dimensions of self-awareness, relational transparency,

internalized moral perspective and balanced processing in relationship to resistance to change. The following hypotheses defined the starting point for further investigation.

H_{02}: There is no statistically significant relationship between self-awareness and resistance to change.

H_{2a}: There is a statistically significant negative relationship between self-awareness and resistance to change.

H_{03}: There is no statistically significant relationship between relational transparency and resistance to change.

H_{3a}: There is a statistically significant negative relationship between relational transparency and resistance to change.

H_{04}: There is no statistically significant relationship between internalize moral perspective and resistance to change.

H_{4a}: There is a statistically significant negative relationship between internalized moral perspective and resistance to change.

H_{05}: There is no statistically significant relationship between balanced processing and resistance to change.

H_{5a}: That there is a statistically significant negative relationship between balanced processing and resistance to change.

The second question examined the four dimensions of authentic leadership in relationship to resistance to change. Extant research suggested that each dimension showed potential to influence resistance to change. Scholars used the ALQ to measure the dimensions of authentic leadership numerous times. The results of this study showed no statistical significance, $F(4,116) = 1.07$, $p = .38$, $R^2 = 0.04$. The results of this study

demonstrated that there is not a relationship between the authentic leadership subscales of relational transparency, internalized moral perspective, balanced processing, and resistance to change though extant literature questioned the possibility.

Self-awareness: The study of Reams and Reams (2015) showed that successful change leaders demonstrated elevated levels of self-awareness with a capacity to remain synchronized with the overall purpose of change. It appeared that those leaders who lack self-awareness tend to gravitate towards the status quo in a resistive manner, which impairs change initiatives. It then followed that to serve as a change agent a project manager must develop self-awareness to sense a change in self as well as direct a change in others. Through quantitative measures, this study examined the potential relationship between self-awareness and resistance to change in project managers. The results did not affirm self-awareness mitigates a resistive disposition.

While antecedent research showed a relationship between self-awareness and change, the researchers did not examine the more acute question relative to resistance to change. The findings herein show no relationship between the two variables validating the null hypothesis. There is no statistically significant relationship between authentic leadership and resistance to change evidenced by $b = -0.02$, $p = .90$. The next theoretical supposition called for an examination of relational and resistance to change.

Relational transparency: Relational transparency describes the ability of a leader to communicate intent with others efficaciously. Vogelgesang et al. (2013) concluded that communication transparency is an antecedent to the kind of leader integrity that encourages an environment of engagement and work performance. If relational transparency is an essential means of demonstrating behavioral integrity, communications

appeared the most explicit expression of that trait. The specific examination of how transparency influences resistance to change in project managers remained unknown.

Relational transparency showed kinetic potential to overcome the forces of resistance to change in existing research. This study examined but could not affirm the postulation relative relational transparency's influence on resistance to change in project managers. The findings show no significant relationship between the two variables, validating the null hypothesis. There is no statistically significant relationship between relational transparency and resistance to change as evidenced by $b = 0.24$, $p = .08$. The following theoretical supposition called for an examination of internalized moral perspective and resistance to change.

Internalized moral perspective: Internalized moral perspective provides a moral compass that leaders may use to maintain a disciplined approach to work. Datta (2015) observed that an internalized moral perspective involves self-regulation while Hinojosa et al. (2014) added that deeply rooted values guide the self-regulation. In contrast, Joosten et al. (2014) studied self-regulation in unethical leadership behaviors and found that those leaders who are low in moral identity experience a kind self-regulatory depletion under stress that leads to unethical behaviors. It seems that significant identity with internalized moral perspective provides a safeguard against discrediting ethical compromise. The characteristic of internalized moral perspective appears to provide a mechanism of altruistic discipline that generates a positive regulation in a leader.

Yeow and Martin (2013) described leader self-regulation as a competency which allows leaders to help themselves to reconcile differences between self and others. The reconciliation perspective is somewhat reflective of balanced processing as described by

Neubert et al. (2013) considered both self-regulation and leader ethics and concluded that leaders who can communicate moral ideas while maintaining a connection with others contribute to a kind of regulated forces that may effectively voice improvements and changes over the status quo. The ethical regulation of an internalized moral perspective showed the potential to address the status quo seeking tendencies of resistance to change in project managers.

In contrast, the findings of this study showed no relationship between the internalized moral perspective and resistance to change, which validated the null hypothesis. There is no statistically significant relationship between internalized moral perspective and resistance to change as evidenced by $b = 0.01$, $p = .94$. Lastly, the following theoretical supposition called for an examination of balanced processing and resistance to change.

Balanced processing: According to Alavi and Gill (2017), the ability to consider diverse perspectives, free of personal bias, in the process of decision making depends upon balanced processing. Leaders in the fast-paced change environment of the globalized economy must make sound and timely decisions. According to Welsh, and Ordonez (2014), subconscious processes can influence decision making no matter the leader perspective. Given this innate bias tendency, balanced processing appeared critical to a fair consideration of diverse perspectives. Wang et al. (2014) described balanced processing as an objective analysis of all relevant information before an individual makes a decision. Authentic leaders must openly link between diverse people and ideas, often separated by culture and workspace while making decisions of consequence. Gilstrap

(2013) underscored the need for a balanced process by summarizing the chaotic nature of rapid change, which requires an inclusive approach to decision making.

Wong and Laschinger (2013), reinforced the decision-making perspective of Alavi and Gill (2017) while correlating balanced process with empowerment. The research of Wong and Laschinger (2013) further suggested that when leaders employ an inclusive approach characterized by balanced processing, then a sense of empowerment in the workplace results. A certain environment of empowerment appears a meaningful way to convey authenticity. Ownership of work results much like ownership of change contributes to an empowered workplace. Wong and Laschinger (2013) observed that balanced processing, when demonstrated through involvement, contributes to committed ownership of decisions, goals, and results.

To operationalize balanced processing leaders must possess a disposition of service before. Hinojosa et al. (2014) observed that leaders who use balanced processing should consider the interest of the group even when those interests' conflict with their own. This other's centric dimension of leading reflects the higher order value of selfless service that appears to generate from balanced processing. According to Huneke, and Pinel (2016), a selfless approach promotes a sense of validation and belonging throughout a workgroup.

Considering the challenges of resistance to change, the selfless effects of balanced processing could influence the grounding in traditions generated from resistance to change. Fuchs and Prouska (2014) observed that positive support generates a change-schema that mitigates perceptual distortions responsible for resistance to change. In contrast, the findings of this study showed no relationship between balance processing

and resistance to change, which validated the null hypothesis as evidenced by $b = -0.12$, $p = .39$. There is no statistically significant relationship between balanced processing and resistance to change as measured by this study.

Research question 3. The third research question: To what extent, if any, does certification serve as a moderator for authentic leadership and resistance to change provides a practical organizational dimension to the investigation. The following hypothesis was considered relative to research question 3.

H_{06}: PMP® certification does not serve as a statistically significant moderator for authentic leadership and resistance to change.

H_{6a}: PMP® certification serves as a statistically significant moderator for authentic leadership and resistance to change.

The findings of this study showed that PMP® certification did not serve as a statistically significant moderator for authentic leadership and resistance to change, $p = .09$. The statistical modeling did not yield a statistically significant result as suggested in the alternate hypothesis. Relative to existing research this finding provides important insight researchers and to the body of knowledge. Although there was no moderating effect found in the data, there was a significant positive relationship between PMP® certification and resistance to change, which showed that the certification influences resistance to change in project managers. Figure 14 depicts the significant results of the moderated multiple regression testing.
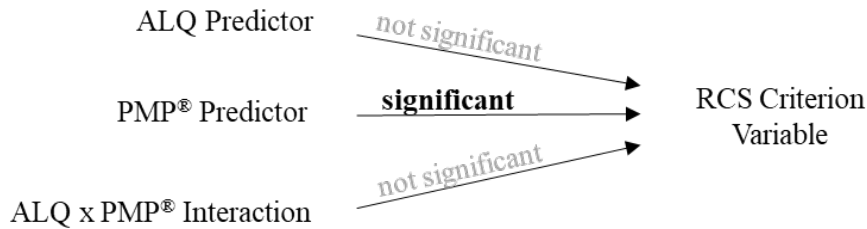
Figure 15. Moderated multiple regression perspective.

The model one PMP® predictor results of the moderator linear regression were significant, $F(2,118) = 3.39$, $p = .04$, $R^2 = 0.05$, indicating that approximately 5% of the variance in the resistance to change variable is explainable by the PMP® dichotomous predictor variable. The results demonstrate that PMP® certification has a significant positive relationship with resistance to change. Those having PMP® certification are significantly more resistant to change than those who were not PMP® certified.

This question of leadership, resistance to change, and the professional certification, within the theoretical framework of OCT, emerged from existing research. Lundy and Morin (2013) found that both leadership and formal project methods and competencies showed instrumental in reducing resistance to change. The researchers recommend further studies into various aspects of project management leadership that affect project performance. While this study did not show a clear relationship between authentic leadership and resistance to change, the evidence of a relationship between PMP® certification and resistance to change emerged. The non-PMP® sample group participants showed a lesser propensity towards resistance to change than the PMP® certified group participants. Yet the moderating effects were not evident.

In contrast, Wang et al. (2014) used the ALQ to examine how positive psychological capital moderated between authentic leadership and performance. In this case, the ALQ provided a normal sample, though the population under study was much

larger than the sample herein. Relative to resistance to change Beal et al. (2013) revealed that resistance to change moderated the effect of positive psychological capital on organizational citizenship behaviors. While these contrasting findings show insight into moderating effects relative to the positive psychology of leadership and the impact of resistance to change, this study did not produce similar findings. PMP® certification does not serve as a statistically significant moderator for authentic leadership and resistance to change. The implication of these observations will be presented in the next section.

Implications

Leader effectiveness in an environment of change is generally viewed as value added in most organizations. How leadership traits can breach organizational obstacles such as resistance to change is vital in the present era of continuous change. The ability to overcome the cognitive dissonance of resistance to change showed effective potential organizationally, individually, and practically. Practical implications such as the utility of PMP® certification in project managers are essential to organizational project efficiencies as well as to individual project managers who seek relevant career enhancements.

This study looked at the attributes of authentic leadership in project managers to understand whether a relationship existed with the disposition of resistance to change. The leadership attributes of self-awareness, internalized moral perspective, balance processing, and transparency generally appear as positive attributes for leaders to exercise. In contrast, the results of this study revealed that there is no relationship between authentic leadership and resistance to change. The findings further showed that PMP® certification does not moderate the relationship between the authentic leadership and resistance to change constructs. The theoretical practical, and further implications for

both authentic leadership and resistance to change constructs generated from this examination express the importance of this study.

Theoretical implications. The theoretical framework of this study consisted of the organizational commitment model initially developed by Meyer and Allen (1991). The model consists of diverse types of organizational commitment including normative, continuance, and affective commitment. According to Meyer and Allen (1991), normative commitment is a feeling of obligation to stay at an organization, continuance commitment is a need to stay at an organization due to the prohibitive cost of leaving, and affective commitment is an emotional effect or attachment for an organization. In this study, affective commitment was of particular interest in that it appeared consistent with the routine seeking tenancies generated from the disposition of resistance to change.

In the OCT construct affective commitment is a result of habitual patterns of work experiences that generate feelings of comfort. The patterns of work concept parallel routine seeking behaviors generated from resistance to change. The similar sense of commitment to norms may generate or reinforce a reflexive resistance to change. Michel et al. (2013) cited four reliable factors related to resistance to change including, routine seeking. The tendency to seek routines appears a means to find safety, security, and stability when confronted with too many unknowns. Oreg and Sverdlik (2011) fully described routine seeking as the degree that an individual enjoys stable and routine environments. In essence, the routine seeking response to resistance to change appeared consistent with the comfort from habitual work patterns termed in the OCT model as affective commitment.

While the research questions in this study aligned with the OCT (Meyer & Allen, 1991) foundation, a statistically significant relationship was not found between the constructs of authentic leadership and resistance to change. The research of Meyer and Allen (1991) recognized that commitment generates from antecedent variables that generate certain behavioral states. While reflective of the routine seeking behaviors of resistance to change, the effects of authentic leadership on resistance to change remain unproven though the questions examined in this study thoroughly examined the various aspects of the theoretical framework.

The results of previous research demonstrated the linkage between authentic leadership and the OCT construct. Walumbwa et al. (2008) cited organizational commitment as defined by OCT as a critical outcome of authentic leadership. So much so that Walumbwa et al. (2008) hypothesized, then demonstrated, that authentic leadership positively related to organizational commitment when controlling for ethical and transformational leadership respectively. Other researchers such as Leroy et al. (2012) observed that authentic leadership behaviors drive organizational commitment by aligning words and actions, which in turn facilitates adaptations. The theory of organizational commitment suggests that the interplay of behavior, conditions, and psychological states influence organizational dynamics. This study sought to elucidate through the lens of OCT if the authentic leadership behaviors mitigated the psychological state of resistance to change, given the condition of PMP® certification through three research questions.

The first research question examined to what extent, if any, does leadership predict resistance to change. This question ultimately evaluated if the positive behavioral

factors of authentic leadership significantly influenced the psychological state of resistance to change. While this behavior-to-disposition dyad reflected the fundamental OCT framework, the relationship could not be statistically demonstrated in this study. The second research question examined if each of the four authentic leadership components significantly predicted resistance to change? The authentic leadership variables which include self-awareness internalized moral perspective, relational transparency, and balance process add behavioral dimensions to authentic leadership. None of the behavioral dimensions proved effective in ameliorating resistance to change in the sample of project managers. The condition of PMP® certification appeared to contrast with to the OCT framework. While PMP® condition did not moderate the relationship between the constructs of authentic leadership and resistance to change, a positive relationship between PMP® certification and resistance to change emerged.

Practical implications. The practical implications of this study show that authentic leadership behaviors may not provide an effective means to mitigate resistance to change in project-based environments. While authentic leadership is a "positive, genuine, transparent, ethical form of leadership" (Wang et al., p. 5.) that builds positive psychological capital, the leadership behaviors did not ameliorate resistance to change in project managers. Organizations may use the leadership construct to build a positive environment, but the effects of authentic leadership on the dissonance of resistance to change are not significant.

McKimmie (2015), described cognitive dissonance as an adversarial state that results from inconsistency between cognitions. This sense of conflict can present a challenge between two opposing forces, known and unknown. In such instances, Randles

et al. (2015) asserted that people become motivated to dispel the arousal of dissonance through accommodations. In this study, the understanding and use of authentic leadership did not overcome the opposing force of resistance to change in a practical way. Additionally, the study did not show a moderating effect between authentic leadership and resistance to change through PMP® certification.

In contrast, Syed Muhammad et al. (2015) studied the moderating effect of top management support on the relationship between transformational leadership and project success. While the study showed that project managers might use transformational leadership to enhance success, the research was a top-down approach that did not account for resistance to change in project managers. This study examined the practical effects of PMP® between the two constructs and found that no justification may be made for the certification as a moderating means between the principal constructs.

There was some evidence of a significant positive linear relationship between resistance to change and PMP® certification. This finding was not consistent with the research of Lundy and Morin (2013) who observed that formal project management methods proved instrumental in reducing resistance to change qualitatively. In contrast, Ramazani and Jergeas (2015) reported that while the expense devoted to certifications and project methods are significant, there is little evidence that the expense translates into practical results. The contrasting findings of this research with the assertions of Lundy and Morin (2013) provide evidence of the need to further study the practical implications of PMP® certification relative to resistance to change independently of the authentic leadership construct.

Future implications. This study on authentic leadership and resistance to change in project managers showed implications for future researchers. Previous research showed that authentic leadership had significance for organizations. A leader's synthesis of the authentic leadership competency construct, both psychologically and behaviorally, should result in the accumulation of positive psychological capital. The enhanced positive psychological capital would allow a leader to exercise realistic hopefulness, trustworthiness, and an openness to innovative ideas. Wang et al. (2014) clarified that authentic leaders interpret information from a positive perspective, elevating optimism, and thoughts of possibilities. The data sample in this study produced skewed authentic leadership data that did not show meaningful linear relationships. Understanding how the positive perspective of the construct may empower leaders under the challenge of change remains a valid pursuit worthy of future studies.

As early as 2011, Lloyd-Walker and Walker recommended studies on the relationships between authentic leadership and managing projects. Bakari et al. (2017) further described the need to research authentic leadership in relationship to resistance to change. How authentic leadership interacts in the project management domain where change is persistent remains an essential topic for discovery. It is clear that authentic leadership behaviors are valuable to a positive workplace environment. As such, it remains beneficial to advance scientific knowledge about authentic leadership as well as resistance to change.

Resistance to change will likely persist as a significant barrier to organizational success in the globalized market space. García-Cabrera and García-Barba Hernández (2014) asserted that the state of resistance to change manifests in the three dimensions of

thoughts, feelings, and behaviors. Project managers must be self-aware of their change responses through thoughts, feelings, and behaviors and how they affect others. Considering the importance of resistance to change organizationally, continued research on other behaviors and attributes that may ameliorate resistance to change would benefit the body of knowledge theoretically and project managers practically.

Project managers invest time, money, and effort into professional certifications and development. This effort is widely accepted as relevant and practical to the profession. In contrast, Starkweather and Stevenson (2011) researched PMP® certification as a core competency for project managers and found that there were no project success differences between PMP® certified and non-certified project managers. Other researchers such as Hornstein (2014) concluded that the integration of project management and organizational change management is now a necessity. While this study did not clarify a moderating effect between authentic leadership and resistance to change, the questions related to the utility of formal project management methodologies evidenced by certifications merit further study.

Strengths and weaknesses of the study. The instrumentation in this study provided strength to the study. According to Roof (2013) quality research relies on reliable and valid research instruments. The ALQ and RSC used in this study, demonstrate quality characteristics through several research studies that examined the fundamental elements of the instruments including reliability and validity in multiple settings with various populations. The design of the design of the study provided additional strength to the research. Regression testing provided an exhaustive means to consider the interval data against the relational research questions. The robust number of

participants in this study provided further strength. According to the G*Power a priori analysis, 85 participants were required to achieve a power of .80 (1 – β err prob). This study examined the survey results of 121 project managers, which contributed to the power and generalizability of the results to the population. While the study exhibits some strengths, several limitations bound the results.

The research collected self-reported information through surveys, which could be inaccurate to some degree. The measurement instruments while valid, may not reflect the perspective of the participants due to biases and other reasons. According to Weigold et al. (2013), self-report survey services using instruments such as the Authentic Leadership Questionnaire and Oreg's Resistance to Change Scale appear acceptable when viewed through the lens of comparative benchmarks in research projects.

In contrast, Kormos and Gifford (2014) observed that survey participants might not provide great fidelity between self-reported perceptions and behaviors, which could affect survey responses. The skewed results of the ALQ data generated from this study may show the self-reporting bias phenomena described by Kormos and Gifford (2014). While the integrity of the measurement instruments in this study aimed to mitigate any significant degree of inaccuracy, self-reporting bias may have skewed the ALQ data. Nevertheless, researchers consider instruments such as the ALQ (Walumbwa et al., 2008) and the RCS (Oreg, 2003) as reliable overall, because they have robust data validity across may research studies.

The survey of project managers in this study delimited the sample scope to project managers in the USA. While there may be variation in project managers in

other parts of the world, this delimited population provided important indicators for managing resistance to change in American project managers. By controlling the scope of the demographic sample, the study was manageable within the constraints of the project definition. Other researchers may have the opportunity to compare this work with populations in other regions beyond the scope of the study herein.

The implications, strengths, and weaknesses of this study provide opportunities for further research in the leadership and resistance to change domains. Continued research on authentic leadership is essential as it is a relatively new construct. Fusco et al. (2016) observed that authentic leadership is a new leadership construct in the emergent stages of development. As the authentic leadership model further develops, further studies on its relationship to resistance to change and other change related behaviors will further the body knowledge.

In contrast, resistance to change is a long-standing organizational challenge. As early as 1948, Coch and French identified resistance to change as a combination of individual reactions to frustration coupled with strong group identity. How organizational leaders may overcome the effects of resistance to change in project-based environments demands further study. The persistence of organizational implementation of formal project management methods through professional certifications demands further research on the effectiveness of such professional development investments. The prevalence of PMP® certification in the United States calls for further research evidence of its utility in project-based organizations.

Recommendations

     Recommendations for future research. The progression of knowledge is fundamental to a robust and relevant body of knowledge. As such, empirical research is the lifeblood of understanding hypothesis, research questions, and variables of interest. Research such as this study provides insights and opportunities for the furtherance of future research and ultimately scholarly understanding. This study, like many other studies, was consistent with the historical scholarly intent of gaining knowledge and understating through objective research. This study revealed future research opportunities for authentic leadership, resistance to change, and formal project methods such as are found in the PMP® certification construct.

     Authentic leadership. Authentic Leadership is a framework of ethical leading collaboratively. It would benefit the body of knowledge to understand the influence of authentic leadership in change intense environments fully. Future researchers should pursue the effects of authentic leadership on organizational factors beyond resistance to change. Furthermore, other leadership constructs such as transformational leadership should be considered to quantify effective leadership methods and means to mitigate the freezing effects of resistance to change.

     Lundy and Morin (2013) used qualitative methods to study project leadership and resistance to change using Dulewicz and Higgs' (2005) transformational leadership framework, which resulted in a recommendation of further research relative to resistance to change using other mainstream leader models in project environments. Given the results of this study, a similar quantitative study that substitutes authentic leadership with the transformational leadership model may further the body of knowledge in two ways.

First, a study focused on if or to what extent a relationship exists between transformational leadership and resistance to change for PMP® certified and non-PMP® certified project managers, and whether PMP® certification may serve as a moderator would further the body of knowledge. This study could reinforce the findings of Lundy and Morin (2013) from a quantitative perspective. Second, such a study could clarify if the transformational construct exceeds the utility of the authentic leadership framework examined in this study. As Lundy and Morin (2013) expressed, the question of "what actions, behaviors, and attitudes of the project manager, if any can potentially reduce resistance and facilitate change" (p. 52) persists.

While the perspective of the leader is important, a more holistic view of leadership may provide insight not observed in this study. There are several organizational leadership components such as the leader, followers, and the organization. This study focused on the leader aspect of authentic leadership in the realm of project management. Future research into the follower perspective of authentic leadership and resistance to change should be undertaken to appreciate the effectiveness of the leadership style more thoroughly. Fallatah et al. (2017) demonstrated the positive effects of authentic leadership on organizational identification. Those leaders who demonstrate authentic leadership generated organizational identification in others, which in turn enhanced organizational commitment overall. The question of how authentic leadership could ameliorate resistance to change as seen through the lens of the follower presents a compelling case for further research.

Resistance to change. Resistance to change is a fundamental human reaction that impedes progress and inhibits transformational initiatives. Dunican and Keaster (2015)

characterized the resistive behavior as the opposing human forces that impact change negatively. The seminal work of Coch, and French (1948), further substantiated resistance to change as an individual's reaction to the frustration of change with strong reinforcing group forces. Such definitions reflect the summarization of García-Cabrera and García-Barba Hernández (2014) who referred to resistance to change as a form of cognitive dissonance to the unknown. The continued organizational necessity to overcome resistance to change requires continued research in order for organizations and individuals to meet the demands of a high degree of change in globalized organizations.

The significance of this study centered on the organizational necessity to overcome resistance to change. Lozano (2013) concluded that overcoming resistance to change in today's globalized environment may make the difference between organizational success and failure. This longstanding organizational challenge merits further study. While Bakari et al. (2017) recommended other studies on the role of authentic leadership and behavioral support for change, there are several business and strategic factors beyond leadership that could influence resistance to change. Hornstein (2014) concluded that the integration of project management and organizational change management is now a necessity. How the factors of the two constructs relate in the context of resistance to change may provide further practical insight from a management view for project and change management professionals alike. The practical factors that project managers could learn, acquire, and integrate should be studied in more depth and diverse environments.

The environmental context for this study was grounded in project-based environments. While ubiquitous, environments other than project-based exist in the

globalized market space. Organizational environments such as governmental, legal, medical and retail services may provide the kind of environmental context needed to examine resistance to change and those factors outside of formal project methods that may moderate its freezing effects.

Formal project methods. Lundy and Morin (2013) asserted that formal project management methodology is instrumental in reducing resistance to change. This insight challenges researchers to further study the utility of the formal project management methodologies of PMP® certification. The new findings in this study showed a contrasting positive relationship between PMP® certification and resistance to change. Those without the certification were less resistant to change than those with the certification. Project management professionals could benefit from a more in-depth analysis of this relationship.

The PMI institute ("PMBOK®," 2017) advocates that to manage effectively, project managers must use a triad of talents that include formal project management methods, strategy and business management, and leadership. Extant research shows little about the relational nature between the three talents as described by the PMI. The construct of this study employed the formal project management methods of PMP® certification, authentic leadership, and the strategic need to reduce resistance to change. Further studies into how PMP® certification relates to other leadership models and business management strategies as defined by the PMI talent triangle would provide practical and professional insight into leading projects, organizational effectiveness, and professional development strategies for project managers.

Recommendations for future practice. Based on the findings of this study, future project management practices should focus on effective leadership constructs that may reduce resistance to change in project managers. Penava and Šehic (2014) described project managers who lead projects as change agents, yet many change initiatives fail because of an inadequate leadership style. This study did not demonstrate that a relationship exists between authentic leadership behaviors and the disposition of resistance to change, or that PMP® certification significantly moderated between these two constructs. External pressures, the complexity of change in today's environment, and efficiency compels project managers to address change in new ways. While authentic leadership did not present breakthrough potential over the psychological effects of resistance to change, organizations should seek out and implement leadership styles that provide results.

The significance of this study centered on the organizational necessity to overcome resistance to change. Lozano (2013) concluded that overcoming resistance to change in today's globalized environment may make the difference between organizational success and failure while recommending leadership to address resistance to change. While emergent evidence found in the body knowledge showed authentic leadership as a foundational leader model (Wang et al., 2014), it does not relate to the prevalent obstacle of resistance to change in project management professionals.

Organizations that develop operating systems and standards with the objective of reducing resistance to change should not include authentic leadership in the system. Extant leadership research makes clear the benefits of authentic leadership, but where the objective is to reduce resistance to change, organizations should invest in other leadership

models and attributes that will impact that objective. The acceptance of the null

hypothesis in this study validates the paucity of a possibility that a meaningful

relationship exists between authentic leadership and resistance to change.

Future project managers should seek further understanding of the positive

relationship between PMP® practices and resistance to change. The evidence of the

significant positive relationship may be generated from routine seeking behaviors. The

sense of commitment to PMP® processes, procedures, and certification standards may

generate or reinforce a reflexive resistance to change. In essence, a routine seeking

response, generated from resistance to change, might generate from an affective

commitment to the PMP® framework. Organizations and project management

professionals alike will benefit from an understanding of how an affective commitment to

the PMP® work patterns and process frameworks may relate to resistance to change.

Creating operating systems grounded in formal project methodologies that are framed in

effective leadership principles, should be balanced against increased resistance to change

given the condition of PMP® certification.

In sum, among the desired results of this research was an identification of the

significant leadership variables project managers can develop or acquire to minimize

resistance to change. As evidenced in this research PMP® certification as well as

leadership traits may be learned and applied by project managers. Future organizational

research, while an upfront investment, is essential for the development of future project

managers and effective future project management practices. Further research on the

applicability of the conclusions herein and the practical means to reduce resistance to

change in project management professionals could prove interesting and relevant to the

profession. Advancements in the field of organizational leadership like those described herein should be pursued through further empirical research.

References

Aguinis, H. (2004). *Regression analysis for categorical moderators.* New York, NY: Guilford Press.

Ahsan, K., Ho, M., & Khan, S. (2013). Recruiting project managers: A comparative analysis of competencies and recruitment signals from job advertisements. *Project Management Journal, 44*(5), 36–54. doi:10.1002/pmj.21366

Akbari, M., Amiri, N. S., Imani, S., Rezaeei, N., & Forudi, P. (2017). Why leadership style matters: a closer look at transformational leadership and international marketing. *The Bottom Line 30*(4), 258-278. doi:10.1108/BL-08-2017-0021

Alavi, S. B., & Gill, C. (2017). Leading change authentically. *Journal of Leadership & Organizational Studies, 24(*2), 157-171. doi:10.1177/1548051816664681

Anca, V. (2013). Project management - a tool for implementing change in organizations. *Studies in Business & Economics*, *8*(2), 137-144.

Anca, V. (2014). Leadership - a necessity in projects. *Studies in Business & Economics*, *9*(2), 128-134.

Andersson, G. (2015). Resisting organizational change. *International Journal of Advanced Corporate Learning*, *8*(1), 48-51. doi:10.3991/ijac.v8i1.4432

Applebaum, S. H., Degbe, M. C., MacDonald, O., & Nguyen-Quang, T. (2015a). Organizational outcomes of leadership style and resistance to change (part one). *Industrial and Commercial Training 47*(2), 73-80. doi:10.1108/ICT-07-2013-0045

Applebaum, S. H., Degbe, M. C., MacDonald, O., & Nguyen-Quang, T. (2015b). Organizational outcomes of leadership style and resistance to change (part two).

Industrial and Commercial Training 47(3), 135-144. doi:10.1108/ICT-07-2013-0045

Applebaum, S. H., Habashy, S., Malo, J., & Shafiq, H. (2012). Back to the future: Revisiting Kotter's 1990 change model. *Journal of Management Development*, *31*(8), 764-782. doi:10.1108/02621711211253231

Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, *16*(3), 315-338. doi:10.1093/oxfordhb/9780195335446.013.0004

Baesu, C., & Bejinaru, R. (2013). Leadership approaches regarding the organizational change. *USV Annals of Economics & Public Administration*, *13*(2), 146-152.

Bailey, J. R., & Raelin, J. D. (2015) Organizations don't resist change, people do: Modeling individual reactions to organizational change through loss and terror management. *Organization Management Journal 12*(1) 125-138. doi:10.1080/15416518.2015.1039637

Bakari, H., & Hunjra, A. I. (2017). Authentic leadership questionnaire: Case of its validation through structural equation modeling; evidence from Pakistan. Business & Economic Review. 9(2) 21-48. doi:10.22547/BER/9.2.2

Bakari, H., Hunjra, A. I., & Niazi, G. S. K. (2017). How does authentic leadership influence planned organizational change? the role of employees' perceptions: Integration of theory of planned behavior and Lewin's three step model. *Journal of Change Management, 17*(2), 155-187. doi:10.1080/14697017.2017.1299370

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182.

Beal, L., Stavros, J. M., & Cole, M. L. (2013). Effect of psychological capital and resistance to change on organisational citizenship behaviour. *SAJIP: South African Journal of Industrial Psychology*, *39*(2), 1-11. doi:10.4102/sajip.v39i2.1136

Berkovich, I. (2014). Between person and person: Dialogical pedagogy in authentic leadership development. *Academy of Management Learning & Education*, *13*(2), 245-264. doi:10.5465/amle.2012.0367

Boekhorst, J. A. (2015). The role of authentic leadership in fostering workplace inclusion: A social information processing perspective. *Human Resource Management*, *54*(2), 241-264. doi:10.1002/hrm.21669

Bolstad, J., Dinas, E., & Riera, P. (2013). Tactical voting and party preferences: A test of cognitive dissonance theory. *Political Behavior*, *35*(3), 429-452. doi:10.1007/s11109-012-9205-1

Bradutanu, D. (2014). The influence of the leadership style on the resistance to change phenomenon in Romanian organizations. *Acta Universitatis Danubius: Oeconomica*, 10(1), 5-15.

Burnes, B. (2015). Understanding resistance to change - building on Coch and French. *Journal of Change Management*, 15(2), 92-116. doi:10.1080/14697017.2014.969755

Cagliano, A., Grimaldi, S., & Rafele, C. (2015). Choosing project risk management techniques. A theoretical framework. *Journal of Risk Research, 18*(2), 232-248. doi:10.1080/13669877.2014.896398

Canato, A., Ravasi, D., & Phillips, N. (2013). Coerced practice implementation in cases of low cultural fit: Cultural change and practice adaptation during the implementation of Six Sigma at 3M. *Academy of Management Journal*, 56(6), 1724-1753. doi:10.5465/amj.2011.0093

Caruth, G. D. (2015). Toward a conceptual model of ethics in research. *Journal of Management Research* (09725814), *15*(1), 23-33.

Cervo, S. C., Monico, S. M., dos Santos, N. R., Hutz, C. S. H., & Pais, L. (2016). Authentic leadership Questionnaire: invariance between samples of Brazilian and Portuguese employees. *Psicologia: Reflexão e Crítica*, *29*(40). Epub. doi:10.1186/s41155-016-0046-4

Chen, F., Nunamaker, J., Briggs, R., Corbitt, G., Sager, J., & Gardiner, S. (2014). An application of focus theory to project management processes. *Group Decision & Negotiation*, 23(5), 961-978. doi:10.1007/s10726-012-9323-5

Cheung, S. O., Yiu, T. W., & Lam, M. C. (2013). Interweaving trust and communication with project performance. *Journal of Construction Engineering and Management 139*(8), 941-950. doi:10.1061/(ASCE)CO.1943-7862.0000681

Chronéer, D., & Backlund, F. (2015). A holistic view on learning in project-based organizations. *Project Management Journal*, 46(3), 61.

Coch, L., & French, R. P. (1948). Overcoming resistance to change. *Human Relations*, 512-532. doi:10.1177/001872674800100408

Cowden, R. G., & Meyer-Weitz, A. (2016). Self-reflection and self-insight predict resilience and stress in competitive tennis. *Social Behavior & Personality: An International Journal*, *44*(7), 1133-1149.

Daigneault, P., Jacob, S., & Ouimet, M. (2014). Using systematic review methods within a Ph.D. dissertation in political science: Challenges and lessons learned from practice. *International Journal of Social Research Methodology*, *17*(3), 267-283. doi:10.1080/13645579.2012.730704

Datta, B. (2015). Assessing the effectiveness of authentic leadership. *International Journal of Leadership Studies*, *9*(1), 62-75.

Delost, M. E., & Nadder, T. S. (2014). Guidelines for initiating a research agenda: Research design and dissemination of results. *Clinical Laboratory Science*, 27(4), 237–244.

Denscombe, M. (2009). *Ground rules for social research: Guidelines for good practice* (2nd ed.). Berkshire, Great Britain: Open University Press.

DeVellis, R. F. (2012). *Scale development: Theory and applications* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Di Fabio, A., Bernaud, J., & Loarer, E. (2014). Emotional intelligence or personality in resistance to change? empirical results in an Italian health care context. *Journal of Employment Counseling*, *51*(4), 146-157. doi:10.1002/j.2161-1920.2014.00048.x

Dillman, D. A. (2014). *Mail and Internet surveys: The tailored design method* (4th ed.). Hoboken, NJ: John Wiley and Sons.

Dulewicz, V., & Higgs, M. (2005) 'Assessing leadership styles and organisational context', *Journal of Managerial Psychology*, *20*(2), 105–123. doi:10.1108/02683940510579759

Dunican, B., & Keaster, R. (2015). Acceptance of change: Exploring the relationship among psychometric constructs and employee resistance. *International Journal of the Academic BusinessWorld*, *9*(2), 27-38.

Fallatah, F., Laschinger, H. K. S., & Read, E. A. (2017). The effects of authentic leadership, organizational identification, and occupational coping self-efficacy on new graduate nurses' job turnover intentions in Canada. Nursing Outlook, *65*(2), 172-183. doi:10.1016/j.outlook.2016.11.020

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160.

Field, A. P. (2013) *Discovering statistics using IBM SPSS statistics: And sex and drugs and rock 'n' roll* (4th ed.), London, England: Sage.

Fuchs, S., & Prouska, R. (2014). Creating positive employee change evaluation: The role of different levels of organizational support and change participation. *Journal of Change Management*, *14*(3), 361-383. doi:10.1080/14697017.2014.885460

Fusco, T., O'Riordan, S., & Palmer, S. (2015). Authentic leaders are... conscious, competent, confident, and congruent: A grounded theory of group coaching and authentic leadership development. *International Coaching Psychology Review*, *10*(2), 131-148.

Fusco, T., O'Riordan, S., & Palmer, S. (2016). Increasing leaders' self-concept-clarity in the authentic leadership coaching group. *Coaching Psychologist*, *12*(1), 24-32.

García-Cabrera, A. M., & García-Barba Hernández, F. (2014). Differentiating the three components of resistance to change: The moderating effect of organization-based self-esteem on the employee involvement-resistance relation. *Human Resource Development Quarterly*, *25*(4), 441-469. doi:10.1002/hrdq.21193

Gardner, W. L., Cogliser, C. C., Davis, K. M., & Dickens, M. P. (2011). Authentic leadership: A review of the literature and research agenda. *The Leadership Quarterly*, *22*(6), 1120-1145. doi:10.1016/j.leaqua.2011.09.007

Gilstrap, D. L. (2013). Leadership and decision-making in team-based organizations: A model of bounded chaotic cycling in emerging system states. *Emergence: Complexity & Organization*, *15*(3), 24-54.

Gondo, M., Patterson, K. D. W., & Palacios, S. T. (2013). Mindfulness and the development of a readiness for change. *Journal of Change Management*, *13*(1), 36-51. doi:10.1080/14697017.2013.768431

Hahm, S. (2017) Information sharing and creativity in a virtual team: Roles of authentic leadership, sharing team climate and psychological empowerment. *KSII Transactions on Internet & Information Systems 11*(8) 4105-4119. doi:10.3837/tiis.2017.08.020

Hardy, C., & Maguire, S. (2016). Organizing risk: Discourse, power, and "riskification". *Academy of Management Review*, *41*(1), 80-108. doi:10.5465/amr.2013.0106

Henderson, L. S., Stackman, R. W., & Koh, C. Y. (2013). Women project managers: the exploration of their job challenges and issue selling behaviors. *International Journal of Managing Projects in Business*, *6*(4), 761-791.

Hinojosa, A. S., McCauley, K. D., Randolph-Seng, B., & Gardner, W. L. (2014). Leader and follower attachment styles: Implications for authentic leader-follower relationships. *The Leadership Quarterly*. *25*(3), 595-610. Doi:10.1016/j.leaqua.2013.12.002

Hornstein, H. (2014). The integration of project management and organizational change. *International Journal of Project Management*, (33) 291-298.

Huneke, M., & Pinel, E. C. (2016). Fostering selflessness through I-sharing. *Journal of Experimental Social Psychology*, *63*(1), 10-18. doi:10.1016/j.jesp.2015.11.003

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2016). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*. doi:10.1016/j.jik.2016.07.002

Jones, S. L., & Van de Ven, A. H. (2016). The changing nature of change resistance: An examination of the moderating impact of time. The Journal of Applied Behavioral Science, 52(4), 482-506. doi:10.1177/0021886316671409

Joosten, A., Dijke, M., Hiel, A., & Cremer, D. (2014). Being 'in control' may make you lose control: The role of self-regulation in unethical leadership behavior. *Journal of Business Ethics*, *121*(1), 1-14. doi:10.1007/s10551-013-1686-2

Jost, J. T. (2015). Resistance to change: A social psychological perspective. *Social Research*, *82*(3), 607-636.

Karadağ, E. (Ed.). (2015). *Leadership and organizational outcomes: Meta-analysis of empirical studies*. New York, NY: Springer.

Kim, H. (2013) Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis, *RDE*, 52-54 doi:10.5395/rde.2013.38.1.52

Kormos, C., & Gifford, R. (2014). The validity of self-report measures of proenvironmental behavior: A meta-analytic review. *Journal of Environmental Psychology*, *40*, 359-371. doi:10.1016/j.jenvp.2014.09.003

Koskinen, K. U. (2012). Organizational learning in project-based companies: A process thinking approach. *Project Management Journal*, 43(3), 40–49.

Kotter, J. P. (1995). Leading Change: Why Transformation Efforts Fail. *Harvard Business Review*, *73*(2), 59-67.

Kotter, J. P. (2007). Leading change - why transformation efforts fail. *Harvard Business Review*. *85*(1), 96-103.

Kotter, J. P. (2012). *Leading change: With a new preface by the author* (2nd ed.). Boston, MA. Harvard Business Review Press.

Krog, C. L., & Governder, K. (2015). The relationship between servant leadership and employee empowerment, commitment, trust and innovative behavior: A project management perspective. *Journal of Human Resource Management, 13*(1) , 1-12, doi:10.4102/sajhrm.v13i1.712

Kuipers, B. S., Higgs, M., Kickert, W., Tummers, L., Grandia, J., & Van Der Voet, J. (2014). The management of change in public organizations: A literature review. *Public Administration*, *92*(1), 1-20. doi:10.1111/padm.12040.

Laerd Statistics. (2013). https://statistics.laerd.com

Laslo, Z., & Gurevich, G. (2014). Enhancing project on time within budget performance by implementing proper control routines. *Management*, *19*(72), 53-69. doi:10.7595/management.fon.2014.0019

Lau, R., Cross, W., Moss, C., Campbell, A., De Castro, M., & Oxley, V. (2013). Leadership and management skills of general practice nurses: Experience or education? *International Journal of Nursing Practice, 20*(1), 655-661. doi:10.1111/ijn.12228

Laumer, S., Maier, C., Eckhardt, A., & Weitzel, T. (2016). User personality and resistance to mandatory information systems in organizations: A theoretical model and empirical test of dispositional resistance to change. *Journal of Information Technology, 31*(1), 67-82. doi:10.1057/jit.2015.17

Lawrence, E., Ruppel, C. P., & Tworoger, L. C. (2014). The emotions and cognitions during organizational change: The importance of the emotional work for leaders. *Journal of Organizational Culture, Communications & Conflict*, *18*(1), 257-273.

Leedy, P. D., & Ormrod, J. E. (2016). *Practical research planning and design.* Essex, England: Pearson.

Leroy, H., Palanski, M. E., & Simons, T. (2012). Authentic leadership and behavioral integrity as drivers of follower commitment and performance. *Journal of Business Ethics*, *107*(3), 255-264. doi:10.1007/s10551-011-1036-1

Lewin, K. (1947). Frontiers in group dynamics II. Channels of group life; social planning and action research. *Human Relations*, *1*(2), 143-153. doi:10.1177/001872674700100201

Lewin, K. (1951). *Field theory in social science*. New York, NY: Harper and Row.

Lewis, M. W., Andriopoulos, C., & Smith, W. K. (2014). Paradoxical leadership to enable strategic agility. *California Management Review*, *56*(3), 58-77. doi:10.1525/cmr.2014.56.3.58

Lines, B. C., Sullivan, K. T., Smithwick, J. B., & Mischung, J. (2015). Overcoming resistance to change in engineering and construction: Change management factors for owner organizations. *International Journal of Project Management 33*(2015), 1170-1179, doi:10.1016/j.ijproman.2015.01.008

Lizar, A. A., Mangundjaya, W. L. H., & Rachmawan, A. (2015). The role of psychological capital and psychological empowerment on individual readiness for change. The *Journal of Developing Areas*, *49*(5), 343-352.

Lloyd-Walker, B., & Walker, D. (2011). Authentic leadership for 21st century project delivery. *International Journal of Project Management*, *29*(4), 383-395. doi:10.1016/j.ijproman.2011.02.004

Lozano, R. (2013). Are companies planning their organisational changes for corporate sustainability? An analysis of three case studies on resistance to change and their strategies to overcome it. *Corporate Social Responsibility & Environmental Management*, *20*(5), 275-295. doi:10.1002/csr.1290

Lundqvist, S., & Marcusson, L. (2014). Advertisements for ICT project managers show diversity between Swedish employers' and project management associations' views of PM certifications. *Problems of Management in the 21ˢᵗ Century, 9*(1) 25-55.

Lundy, V., & Morin, P. (2013). Project leadership influences resistance to change: The case of the Canadian public service. *Project Management Journal*, *44*(4), 45-64. doi:10.1002/pmj.21355

Luthans, F., & Avolio, B. J. (2003) Authentic leadership development. In Cameron, K. S., Dutton, J. E., & Quinn, R. E. (Eds.) *Positive organizational scholarship* (pp. 241-258). San Francisco, CA: Berrett-Koehler.

Malik, S. Z., & Masood, S. (2015). Emotional intelligence and resistance to change: Mediating role of psychological capital in telecom sector of Pakistan. *Journal of Commerce & Social Sciences*, *9*(2), 485-502.

Manchester, J., Gray-Miceli, D. L., Metcalf, J. A., Paolini, C. A., Napier, A. H., Coogle, C. L., & Owens, M. G. (2014). Facilitating Lewin's change model with collaborative evaluation in promoting evidence based practices of health professionals. *Evaluation and Program Planning*, *47*, 82-90. doi:10.1016/j.evalprogplan.2014.08.007

Maqbool, R., Sudong, Y., Manzoor, N., & Rashid, Y. (2017). The impact of emotional intelligence, project managers competencies, and transformational leadership on project success: An empirical perspective. *Project Management Journal, 48*(3), 58-75.

Mariana, P., Daniela, B., & Nadina, R. R. (2013). Forces that enhance or reduce employee resistance to change. *Annals of the University of Oradea, Economic Science Series*, *22*(1), 1606-1612.

Marques, J. (2013). Understanding the strength of gentleness: Soft-skilled leadership on the rise. *Journal of Business Ethics*, *116*(1), 163-171. doi:10.1007/s10551-012-1471-7

Martinsou, M., & Hoverfait, P. (2017). Change program management: Toward a capability for managing value-oriented, integrated multi-project change in its context. *International Journal of Project Management 36*(1), 134-146. doi:10.1016/j.ijproman.2017.04.018

Mazzei, A., & Quaratino, L. (2013). Designing organizational change: Learning from a grounded research project. *Journal of Management & Change*, *30/31*(1), 166-179.

McCabe, D. (2014). Making out and making do: How employees resist and make organisational change work through consent in a UK bank. *New Technology, Work & Employment*, *29*(1), 57-71. doi:10.1111/ntwe.12023

McKay, K., Kuntz, J. R. C., & Näswall, K. (2013). The effect of affective commitment, communication, and participation on resistance to change: The role of change readiness. *New Zealand Journal of Psychology*, *42*(2), 29-40.

McKimmie, B. M. (2015). Cognitive Dissonance in Groups. *Social & Personality Psychology Compass*, 9(4), 202-212. doi:10.1111/spc3.12167

Mehta, S., Maheshwari, G. C., & Sharma, S. K. (2014). Role of leadership in leading successful change: An empirical study. *Journal of Contemporary Management Research*, *8*(2), 1-22.

Men, L. R., & Stacks, D. (2014). The effects of authentic leadership on strategic internal communication and employee-organization relationships. *Journal of Public Relations Research 26*(1), 301-324. doi:10.1080/1062726X.2014.908720

Meng, H., Cheng, Z. H., & Guo, T. C. (2016). Positive team atmosphere mediates the impact of authentic leadership on subordinate creativity. *Social Behavior & Personality: An International Journal*, *44*(3), 355-368.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review, 1*(1), 61-98. doi:10.1016/1053-4822(91)90011-Z

Meyers, M. C., van Woerkom, M., de Reuver, R. S. M., Bakk, Z., & Oberski, D. L. (2015). Enhancing psychological capital and personal growth initiative: Working on strengths or deficiencies. *Journal of Counseling Psychology*, *62*(1), 50-62. doi:10.1037/cou0000050

Michel, A., Todnem By, R., & Burnes, B. (2013) The limitations of dispositional resistance in relation to organizational change, Management Decision, 51(4), pp. 761–780. doi: 10.1108/00251741311326554.

Ming-Chu, Y., & Meng-Hsiu, L. (2015). Unlocking the black box: Exploring the link between perceive organizational support and resistance to change. *Asia Pacific Management Review*, *20*(3), 177-183. doi:10.1016/j.apmrv.2014.10.003

Mohanty, N., & Kolheq, S. M. (2016). Understanding psychological capital: Research perspectives. *Indian Journal of Positive Psychology*, *7*(4), 485-494

Müller, R., Andersen, E. S., Kvalnes, O., Shao, J., Sankaran, S., Turner, J. R., & Gudergan, S. (2013). The interrelationship of governance, trust, and ethics in temporary organizations. *Project Management Journal*, *44*(4), 26-44. doi:10.1002/pmj.21350

Neider, L. L., & Schriesheim, C. A. (2011). The Authentic Leadership Inventory (ALI): Development and empirical tests. *Leadership Quarterly*, *22*(6), 1146-1164.

Neubert, M., Wu, C., & Roberts, J. (2013). The influence of ethical leadership and regulatory focus on employee outcomes. *Business Ethics Quarterly*, *23*(2), 269-296. doi:10.5840/beq201323217

Neuman, W. L. (2011). *Social Research Methods: Qualitative and Quantitative Approaches* (7th ed.). Boston, MA: Allyn & Bacon.

Ng, C. T., & Yazdanifard, R. (2015). Managing organizational change and resistance from an individualist vs. collectivist perspective. *International Journal of Management, Accounting & Economics*, *2*(9), 1065-1074.

Nienaber, A. I., Holtorf, V., Leker, J., & Schewe, G. (2015). A climate of psychological safety enhances the success of front end teams. *International Journal of Innovation Management*, *19*(2), -1. doi:10.1142/S1363919615500279

Nixon, M. M. (2014). The phenomena of change: A qualitative study. *Journal of Business & Behavioral Sciences*, *26*(2), 39-57.

Novo, B., Landis, E. A., & Haley, M. L. (2017). Leadership and its role in the success of project management. *Journal of Leadership, Accountability and Ethics, 14*(1) 73-78.

O'Malley, A. (2014). Theory and example of embedding organisational change: Rolling out overall equipment effectiveness in a large mining company. *Australian Journal of Multi-Disciplinary Engineering*, *11*(1), 59-69.

Opatokun, K. A., Hasim, C. N., & Syed Hassan, S. S. (2013). Authentic leadership in higher learning institution: A case study of international Islamic university Malaysia (iium). *International Journal of Leadership Studies, 8*(1), 49-66.

Oreg, S. (2003). Resistance to change: Developing an individual differences measure. *Journal of Applied Psychology, 88*(4), 680-693.

Oreg, S. (2006). Personality, context, and resistance to organizational change. European Journal of Work and Organizational Psychology, 15(1), 73–101. doi:10.1080/13594320500451247

Oreg, S., Bayazit, M., Vakola, M., Arciniega, L., Armenakis, A., Barkauskiene, R., . . . van Dam, K. (2008). Dispositional resistance to change: Measurement equivalence and the link to personal values across 17 nations. *Journal of Applied Psychology*, *93*(4), 935-944. doi:10.1037/0021-9010.93.4.935

Oreg, S., & Sverdlik, N. (2011). Ambivalence toward imposed change: The conflict between dispositional resistance to change and the orientation toward the change agent. *Journal of Applied Psychology*, 96(2), 337-349 13p. doi:10.1037/a0021100

Ortega, A., Van den Bossche, P., Sánchez-Manzanares, M., Rico, R., & Gil, F. (2014). The influence of change-oriented leadership and psychological safety on team learning in healthcare teams. *Journal of Business and Psychology*, *29*(2), 311-321.

Ozorhon, B., Abbott, C., & Aouad, G. (2014). Integration and leadership as enablers of innovation in construction: Case study. (2014). Journal of Management in Engineering, 30(2), 256-263. doi:10.1061/(ASCE)ME.1943-5479.0000204

Öztekin, Ö., İşçi, S., & Karadağ, E. (2015). The effect of leadership on organizational commitment. In E. Karadağ (Ed.). *Leadership and organizational outcomes* (pp. 57-79). New York, NY: Springer International Publishing.

Packendorff, J., Crevani, L., & Lindgren, M. (2014). Project leadership in becoming: A process study of an organizational change project. *Project Management Journal*, *45*(3), 5-20. doi:10.1002/pmj.21418

Pandya, K. D. (2014). The key competencies of project leader beyond the essential technical capabilities. IUP *Journal of Knowledge Management*, *12*(4), 39-48.

Patah, L. A., & Carvalho, M. M. (2016). Success obtained from investments in the project management methodology. *Production*, *26*(1), 129–144. doi:10.1590/0103-6513.048312

Penava, S., & Šehic, D. (2014). The relevance of transformational leadership in shaping employee attitudes towards organisational change. *Ekonomski Anali / Economic Annals*, *59*(200), 131-162. doi:10.2298/EKA1400131P

Peus, C., Wesche, J., Streicher, B., Braun, S., & Frey, D. (2012). Authentic leadership: An empirical test of its antecedents, consequences, and mediating mechanisms. *Journal of Business Ethics*, 107(3), 331-348. doi:10.1007/s10551-011-1042-3

Pinto, J. K. (2014). Project management, governance, and the normalization of deviance. *International Journal of Project Management*, *32*(3), 376-387. doi:10.1016/j.ijproman.2013.06.004

Pinto, J. K. (2013) *Project management: Achieving competitive advantage* (3rd). Upper Saddle River, NJ: Prentice Hall.

PMBOK® guide (2017). In *A guide to the project management body of knowledge* (6th). Newtown Square, PA: Project Management Institute.

PMI Fact File. (2017). PMI Today, 4. Retrieved from http://www.pmitoday-digital.com/pmitoday/may_2017?pg=4#pg4

PMI's pulse of the profession: The high cost of low performance. (2016). Retrieved from http://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2016.pdf

PMI's pulse of the profession: Success rates rise: Transforming the high cost of low performance. (2017). Retrieved from http://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-american-english-2017.pdf

Pollack, J., & Pollack, R. (2015). Using Kotter's eight stage process to manage an organisational change program: Presentation and practice. *Systemic Practice & Action Research*, *28*(1), 51-66. doi:10.1007/s11213-014-9317-0

Prediscan, M., & Roiban, N. R. (2015). Employee involvement in a change process - a case study for Romanian organizations *Annals of the University of Oradea, Economic Science Series*, *24*(1), 1158-1164.

Privitera, G. J. (2013). Survey and correlational research designs. In *Research Methods for the Behavioral Sciences* (p. 225-260). Thousand Oaks, CA: Sage Publications.

Project Management Professional (PMP)® is the most important industry-recognized certification for project managers, (2019). Retrieved from https://www.pmi.org/certifications/types/project-management-pmp

Program Management Improvement and Accountability Act, S. 1550 (2015). Retrieved from https://www.congress.gov/bill/114th-congress/senate-bill/1550

Puth, M., Neuhäuser, M., & Ruxton, G. D. (2015). Effective use of spearman's and kendall's correlation coefficients for association between two measured traits. *Animal Behaviour*, *102*, 77-84. doi:10.1016/j.anbehav.2015.01.010

Qian, J., Lin, X., & Chen, G. Z.-X. (2012). Authentic leadership and feedback-seeking behavior: an examination of the cultural context of mediating processes in China. *Journal of Management & Organization*, *18*(3), 286–299.

Ramazani, J., & Jergeas, G. (2015). Project managers and the journey from good to great: The benefits of investment in project management training and education. *International Journal of Project Management*, *33*(1), 41–52. doi:10.1016/j.ijproman.2014.03.012

Randles, D., Inzlicht, M., Proulx, T., Tullett, A. M., & Heine, S. J. (2015). Is dissonance reduction a special case of fluid compensation? Evidence that dissonant cognitions cause compensatory affirmation and abstraction. *Journal of Personality and Social Psychology*, *108*(5), 697-710. doi:10.1037/a0038933

Reams, J., & Reams, J. (2015). Awareness based technologies for leadership development: Utilising immunity to change coaching. International Journal of Evidence Based Coaching and Mentoring, 13(2), 14-28.

Rego, P., Lopes, M. P., & Nascimento, J. (2016). Authentic leadership and organizational commitment: The mediating role of positive psychological capital. *Journal of Industrial Engineering and Management*, *9*(1), 129-151.

Roof, R. (2013). Authentic leadership questionnaire (ALQ) psychometrics. *Asian Journal of Business Ethics*, 3(1), 57-64. doi:10.1007/s13520-013-0031-2

Savelsbergh, C. M., Havermans, L. A., & Storm, P. (2016). Development paths of project managers: What and how do project managers learn from their experiences? *International Journal of Project Management*, *34*(4), 559-569

Savin, N., & White, K. (1977). The Durbin-Watson Test for Serial Correlation with Extreme Sample Sizes or Many Regressors. *Econometrica, 45(*8), 1989-1996. doi:10.2307/1914122

Scheepers, C. B., & Elstob, S. L. (2016). Beneficiary contact moderates relationship between authentic leadership and engagement. *South African Journal of Human Resource Management*, *14*(1), 1-10. doi:10.4102/sajhrm.v14i1.758

Schein, E. H. (1996) Kurt Lewin's change theory in the field and in the classroom: Notes toward a model of managed learning, *Systems practice*, *9*(1), 27-47. doi:10.1007/BF02173417

Schein, E. H. (1997a). Organizational learning: What is new. In A. Rahim, R. T. Golembiewski, & L. E. Pate (Series Ed.), *Current topics in management: Vol. 2.* (pp. 11-25). Greenwich, CT: JAI Press.

Schein, E. H. (1997b). Organization development and the organization of the future. *Organization Development Journal*, *15*(2), 11-20.

Shao, J. (2017). The moderating effect of program context on the relationship between program managers' leadership competencies and program success. *International Journal of Project Management*, 1-13. doi:10.1016/j.ijproman.2017.05.004

Srivastava, A. P., & Jaiswal, D. (2015). Leaders' positive expectations and subordinate performance: A study of academic professionals. *South Asian Journal of Management*, *22*(3), 7-27.

Ssegawa, J. K. (2015). A domain-based and integrated conceptual framework for effective project leadership. *West Indian Journal of Engineering, 38*(1), 4-14.

Starkweather, J. A., & Stevenson, D. H. (2011). PMP® certification as a core competency: necessary but not sufficient. *Project Management Journal*, *42*(1), 31–41. doi:10.1002/pmj.20174

Stander, F. W., de Beer, L. T., & Stander, M. W. (2015). Authentic leadership as a source of optimism, trust in the organisation and work engagement in the public health care sector. *South African Journal of Human Resource Management*, *13*(1), 1-12. doi:10.4102/sajhrm.v13i1.675

Stoverink, A. C., Umphress, E. E., Gardner, R. G., & Miner, K. N. (2014). Misery loves company: Team dissonance and the influence of supervisor-focused interpersonal justice climate on team cohesiveness. *Journal of Applied Psychology*, *99*(6), 1059-1073. doi:10.1037/a0037915

Sushil. (2013). Does continuous change imply continuity? *Global Journal of Flexible Systems, Management 14*(3):123–124. doi:10.1007/s40171-013-0041-x

Syed Muhammad, J. I., Choi, S. L., Goh, C. F., Syed Muhammad, L. A. B., & Shah, B. (2015). Moderating effect of top management support on relationship between transformational leadership and project success. *Pakistan Journal of Commerce & Social Sciences*, *9*(2), 540-567.

Szabo, L. (2016). Sustainability, creativity and innovation in project management: Model development for assessing organizational performance through projects. *Vezetéstudomány / Budapest Management Review, 47(10), 3-18.*

Taher, N. B., & Krotov, V. (2016). Business process reengineering: Addressing sources of resistance and sabotage tactics. *Journal of Competitiveness Studies*, 24(3), 145-163.

Todnem By, M. A., & Burnes, B. (2013) The limitations of dispositional resistance in relation to organizational change, *Management Decision*, *51*(4), pp. 761–780. doi:10.1108/00251741311326554.

Tonkin, T. H. (2013). Authentic versus transformational leadership: Assessing their effectiveness on organizational citizenship behavior of followers. *International Journal of Business & Public Administration*, *10*(1), 40-61.

Van den Heuvel, S., & Schalk, R. (2015). The relationship between fulfilment of the psychological contract and resistance to change during organizational transformations. *Journal of Experimental Botany*, *66*(6), 283-313. doi:10.1177/0539018409102415

Varajão, J., & Cruz-Cunha, M. (2013). Using AHP and the IPMA competence baseline in the project managers selection process. *International Journal of Production Research, 51*(11), 3342-3354. doi:10.1080/00207543.2013.774473

Vogelgesang, G. R., Leroy, H., & Avolio, B. J. (2013). The mediating effects of leader integrity with transparency in communication and work engagement/performance. *The Leadership Quarterly, 24*(3), 405-413. doi:10.1016/j.leaqua.2013.01.004

Vogt, W. P. (2005). *Dictionary of statistics & methodology*: SAGE Publications Ltd. doi:10.4135/9781412983907

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *Journal of Management, 34*(1), 89-126.

Wang, C., & Bird, J. J. (2011). Multi-level modeling of principal authenticity and teachers' trust and engagement. *Academy of Educational Leadership Journal*, 15(4), 125–147.

Wang, H., Sui, Y., Luthans, F., Wang, D., & Wu, Y. (2014). Impact of authentic leadership on performance: Role of followers' positive psychological capital and relational processes. *Journal of Organizational Behavior, 35*(1), 5-21. doi:10.1002/job.1850

Weigold, A., Weigold, I. K., & Russell, E. J. (2013). Examination of the equivalence of self-report survey-based paper-and-pencil and internet data collection methods. *Psychological Methods, 18*(1), 53-70. doi:10.1037/a0031607

Welsh, D. T., & Ordonez, L. D. (2014). Conscience without cognition: The effects of subconscious priming on ethical behavior. *Academy of Management Journal*, *57*(3), 723-742. http://dx.doi.org/10.5465/amj.2011.1009

Wener, P., & Woodgate, R. L. (2013). Use of a qualitative methodological scaffolding process to design robust interprofessional studies. *Journal of Interprofessional Care, 27*(4), 305-312. doi:10.3109/13561820.2013.763775

Whiteside, D., & Barclay, L. (2016). The face of fairness: Self-awareness as a means to promote fairness among managers with low empathy. *Journal of Business Ethics, 137*(4), 721-730.

Wiedermann, W., Hagmann, M., & von Eye, A. (2015). Significance tests to determine the direction of effects in linear regression models. *British Journal of Mathematical and Statistical Psychology, 68*(1), 116-141. doi:10.1111/bmsp.12037

Wong, C. A., & Laschinger, H. K. (2013). Authentic leadership, performance, and job satisfaction: The mediating role of empowerment. *Journal of Advanced Nursing, 69*(4), 947-959.

Xiong, K., Lin, W., Li, J. C., & Wang, L. (2016). Employee trust in supervisors and affective commitment: The moderating role of authentic leadership. *Psychological Reports, 118*(3), 829-848. doi:10.1177/0033294116644370

Yeow, J., & Martin, R. (2013). The role of self-regulation in developing leaders: A longitudinal field experiment. *The Leadership Quarterly, 24*(5), 625-637. doi:10.1016/j.leaqua.2013.04.004

Zachariadis, M., Scott, S., & Barrett, M. (2013). Methodological implications of critical realism for mixed-methods research. *MIS Quarterly, 37*(3), 855-879.

Zadeh, M. T., Dehghan, R., Ruwanpur, J. Y., & Jergeas, G. (2016). An index to assess project management competencies in managing design changes. *International Journal of Construction Engineering and Management. 5*(1), 11-24. doi:10.5923/j.ijcem.20160501.02.

Zubair, A., & Kamal, A. (2015). Authentic leadership and creativity: Mediating role of

work- related flow and psychological capital. *Journal of Behavioural Sciences,*

25(1), 150-171.

Appendix A.

Site Authorization Letters

Qualtrics LLC uses an opt-in process for panel member participation. The 'opt-in for market research' process requires respondents to submit an initial registration form requesting to participate in market research studies. Potential respondents build their profile from a standardized list of questions. The panels then use the profiles to select studies that would best fit the case specifications. All of Qualtrics' panels have a double opt-in requirement. Those who do not reconfirm will not be contacted to participate in a survey. To ensure profiles are consistently updated, Qualtrics sets an expiration date for each profiling question.

Qualtrics randomly selects respondents for surveys where respondents are highly likely to qualify. Potential respondents are sent an email invitation informing them that the survey is for research purposes only, how long the survey is expected to take and what incentives are available. Members may unsubscribe at any time. To avoid self-selection bias, the survey invitation does not include specific details about the contents of the survey. Qualtrics guarantees that respondents are carefully taking the survey. Qualtrics will replace respondents who straight-line through surveys or finish in less than 1/3 of the average survey completion length ("ESO," 2014).

Reference

ESOMAR 28. (2014, June 20). *Qualtrics ESOMAR 28 Questions*, 1-8.

QUALTRICS panels

QUALTRICS, LLC

2250 N. University Pkwy, #48 Provo, UT 84604
Phone: 801.374.6682 | Fax: 866.562.9828
chased@qualtrics.com

PANEL QUOTE

Date: 01-May-2017

expires after 30 days

JOB	PAYMENT TERMS
Qual1836-0331ProjectManagers	Net 30 days of receiving invoice

QTY	DESCRIPTION	UNIT PRICE	LINE TOTAL
120	**Targeting**: Project Managers COST: Qualtrics one time project license - Panels - 120N X CPI = Total - **LOI** (Length of Interview/Survey): 10 Minutes or less. **IR** (Qualifying Rate) 80%		
	TOTAL:		USD

Quotation prepared by: Chase de Jong | chased@qualtrics.com | 801-709-2164 |

This is a quotation on the goods named, subject to the conditions noted below.
Prices shown do not include sales tax, HST, VAT or other taxes that may apply. Applicable taxes will be presented on the invoice.

To accept this quotation, please sign here:

Project Responsibilities

- Unless prior arrangements are made with Qualtrics, Max Butler must have an account and license with Qualtrics research suite.

- Max Butler will provide the survey methodology, survey design, and qualifying question syntax to Qualtrics, unless other arrangements are made with Qualtrics.

- Qualtrics will be responsible for sending Max Butler's survey out through its panel partners to the targeted respondents, inviting respondents to complete the online survey in return for incentives/ cash honorarium.

- Qualtrics will be responsible for reviewing quotas and screeners, adding redirects, and approving the survey prior to launching to targeted respondents.

- For surveys targeting international sample, the survey must be designed and programmed in the native language of the countries being targeted.

- Unless prior arrangements are made with Qualtrics, Max Butler will be responsible for building the survey; Qualtrics will be responsible for hosting the survey.

- Unless prior arrangements are made with Qualtrics, Max Butler will be responsible for all data analysis and other data interpretation/presentation work.

- Max Butler is not permitted to collect any panel member's personal information such as, but not limited to, name, email address, physical address, phone number, etc. without written notice, prior approval, and consent from Qualtrics and its panel partners.

- Project minimum $ on all projects.

- In the event the expected amount of responses is not collected from a panel project, the amount prepaid for the uncollected responses will not be refunded, but will be applied towards future Qualtrics panels/ projects/ licenses.

- All respondents quoted are assumed to be from the United States of America, unless stated otherwise in this quote.

- If a project is assigned to a Qualtrics project manager on a Friday, Max Butler understands that due to Qualtrics' panel partner constraints and the required setup time, it is likely that data collection will not begin until the following Monday. Max Butler is aware

that if a survey is not live by **6pm EST** on a Friday, data collection will most likely begin the following Monday.

- Max Butler understands that after a project manager is assigned, it can take up to **24 hours** for data collection to begin.

- Unless specified to the Qualtrics project manager before data collection begins, we will be recording terminate responses as well as survey completions toward the number of responses allowed in Max Butler's Qualtrics software license. Please note that these terminates will not count against the total good completes (n) requested for this project. *Please let your project manager know before running the project if you do not want to record terminate responses against the Max Butler Qualtrics software license agreement.*

- Any criteria such as, but not limited to, minimum time spent in survey, attention filters, etc. which Max Butler intends to use to judge the validity of qualifying completes must be approved by Qualtrics prior to launch.

- If the incidence rate drops below the specified range or Max Butler changes specified targeting, additional charges may apply.

- By signing this document, Max Butler is providing permission for a Qualtrics project manager as well as account manager to access Max Butler's account for the duration of this project for reasons expressly related to the project itself.

To accept the conditions noted above, please sign here:

_____

THANK YOU FOR YOUR BUSINESS!

Appendix B.

IRB Approval Letter

GRAND CANYON
UNIVERSITY

3300 West Camelback Road, Phoenix Arizona 85017   602.639.7500   Toll Free 800.800.9776   www.gcu.edu

DATE: May 09, 2018

TO: Max Butler
FROM: Grand Canyon University Institutional Review Board

STUDY TITLE: The impact of authentic leadership on resistance to change in project managers
IRB REFERENCE #:   IRB-2018-214
SUBMISSION TYPE: Initial Review Submission Packet

ACTION: Determination of Exempt Status

REVIEW
CATEGORY: Category 3

Thank you for your submission of New Project materials for this research study.

Grand Canyon University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. You now have GCU IRB approval to collect data.

If applicable, please use the approved informed consent that is included in your published documents.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact the IRB office at irb@gcu.edu or 602-639-7804. Please include your study title and reference number in all correspondence with this office.

ADVANCEMENT TO CANDIDACY
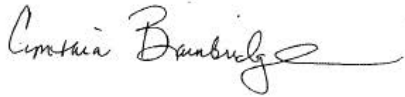
Congratulations!

On behalf of the College of Doctoral Studies, we are pleased to inform you that you have now advanced to the Candidacy stage of your Doctoral journey. This means you have completed all of the required proposal phases of the dissertation and you are now ready to move into the research portion of the dissertation work.

This is an important step in the doctoral process. Through advancing to candidacy, you are now among an elite group of learners who are doing academic research. This also means you are representing yourself and Grand Canyon University as an independent doctoral researcher and with that comes a great deal of responsibility. We wish you the best in your endeavors! Congratulations on this important step in your doctoral journey and welcome to Candidacy!

Dr. Michael Berger
Dean, College of Doctoral Studies

Dr. Cynthia Bainbridge
Assistant Dean, Research and Dissertations Director, Institutional Review Board College of Doctoral Studies

Appendix C.

Informed Consent

INFORMED CONSENT FORM
The impact of authentic leadership on resistance to change in project managers
INTRODUCTION
The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.
RESEARCH
Max Butler, a student in the Grand Canyon University has invited your participation in a research study. I am completing this research as part of my doctoral degree.
STUDY PURPOSE
The purpose of this research is to see if authentic leadership traits relate to resistance to change in project managers.
ELIGIBILITY
You are eligible to participate in this research if you: 1.   are a PMP® certified project manager,   2.   are a project manager without PMP® certification.   You are not eligible to participate in this research if you: 1.   you do not work as a project manager.

DESCRIPTION OF RESEARCH ACTIVITY

If you decide to participate, then you will complete a 37-question online survey. You may skip questions or exit the survey anytime. Approximately 120 project managers will participate in this study.

RISKS

If you decide to participate in this research study, then you may face some risks. Your time is an important risk consideration. To decrease the risk impact, you can skip any item in the survey. You may also stop participating at any time.

BENEFITS

You will directly benefit from participating in this study by gaining insight into authentic leadership and resistance to change. If you decide to participate indirect benefits to you are a greater understanding of behaviors that reduce change resistance.

ANNONYMITY

All information obtained in this study is anonymous unless disclosure is required by law. What you say and how you answer the questions in this survey cannot be connected to you. The results of this research study may be used in reports, presentations, and publications. The researcher will not identify you.

To maintain anonymity of your records, Max Butler will receive no identifying information from the survey administrator. Qualtrics will code the responses using numbers. Max Butler will store all the study data on a secure hard drive. The hard drive will remain separate from internet connectivity.

The people who have access to your coded information are myself and my dissertation committee. I will keep your data for 3 years. Then, I will delete electronic data and destroy paper data.

WITHDRAWAL PRIVILEGE

It is ok for you to decline to participate in this research study. Even if you say yes now, you are free to say no later. You may stop participating at any time without penalty. If you decide to stop participation, you may do so by closing the webpage. If so, I will not use your responses. Your decision will not affect your relationship with Grand Canyon University. You will not lose benefits that you might otherwise be entitled to.

COSTS AND PAYMENTS

There is no financial cost to you as a study participant. Qualtrics will thank you with an incentive in the amount you agreed upon before you entered the survey.

COMPENSATION FOR ILLNESS AND INJURY

If you agree to participate in the study, then your consent does not waive any of your legal rights. However, no funds have been set aside to compensate you in the event of injury.

VOLUNTARY CONSENT

Max Butler will answer your questions about the research study. You may contact him before or after your consent.

██████████████

██████████████

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the College of Doctoral Studies at IRB@gcu.edu; (602) 639-7804.

This form explains the nature, demands, benefits and any risk of the research study. By clicking "I Agree' you confirm that you are 18 years or older, understand the content of this form, and agree to participate in this study.

----I Agree ---- I Do Not Agree

Appendix D.

Copy of ALQ Permission Letter to Use the Instruments

Authorization for Use of the Authentic Leadership Questionnaire:

Max Butler

mind garden

To whom it may concern,

This letter is to grant permission for Max Butler to use the following copyright material for his/her research:

Instrument: *Authentic Leadership Questionnaire (ALQ)*

Authors: *Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa*

Copyright: *2007 by Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa*

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any published material.

Sincerely,

Mind Garden, Inc.
www.mindgarden.com

Appendix E.

ALQ Instrument Example

Authentic Leadership Questionnaire (ALQ Version 1.0 **Self**)

Bruce J. Avolio, Ph.D.

Name: _____ Date: _____

Organization ID #: _____ Person ID #: _____

Instructions: The following survey items refer to your leadership style, as you perceive it. **Please judge how frequently each statement fits your leadership style using the following scale:**

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

As a leader I...

1. say exactly what I mean 　　　　　　0 1 2 3 4
2.
3.
4.
5.
6.
7. make decisions based on my core values 　　　　　　0 1 2 3 4
8.
9.
10.
11.
12.
13. seek feedback to improve interactions with others 　　　　　　0 1 2 3 4
14.
15.
16.

Appendix F.

Copy of Permissions Letters to Use the Resistance to Change Scale

Authorization for Use of the Resistance to Change Scale:

◢ PsycTESTS®

Resistance to Change Scale

PsycTESTS Citation:
Oreg, S. (2003). Resistance to Change Scale [Database record]. Retrieved from PsycTESTS. doi:
10.1037/t00513-000

Test Shown: Full

Test Format:
Six-point Likert scales, which ranged from 1 (strongly disagree) to 6 (strongly agree).

Source:
Oreg, Shaul, Bayazit, Mahmut, Vakola, Maria, Arciniega, Luis, Armenakis, Achilles, Barkauskiene, Rasa, Bozionelos,
Nikos, Fujimoto, Yuka, González, Luis, Han, Jian, Hřebíčková, Martina, Jimmieson, Nerina, Kordačová, Jana,
Mitsuhashi, Hitoshi, Mlačić, Boris, Ferić, Ivana, Topić, Marina Kotrla, Ohly, Sandra, Saksvik, Per Øystein, Hetland,
Hilde, Saksvik, Ingvild, & van Dam, Karen (2008). Dispositional resistance to change: Measurement equivalence and
the link to personal values across 17 nations. Journal of Applied Psychology, Vol 93(4), 935-944. doi:
10.1037/0021-9010.93.4.935

Permissions:
Test content may be reproduced and used for non-commercial research and educational purposes without seeking
written permission. Distribution must be controlled, meaning only to the participants engaged in the research or
enrolled in the educational activity. Any other type of reproduction or distribution of test content is not authorized
without written permission from the author and publisher.

From: "Shaul Oreg"
To: "Max Butler"
Date: 08/22/2017 04:22:01 GMT
Subject: **RE: Resistance to Change Scale - Instrument & Permissions**
Attachments: ✎RTC Scale.docx (26KB)

Hi Max,

I apologize for the delay in getting back to you. I relocated and it's taking time to settle in. I am attaching the dispositional resistance to change scale (I gather you are referring to this one, rather than the change attitude scale?).

Please feel free to use the scale for your research.

Shaul Oreg

From: "Max Butler"
Sent: Friday, August 18, 2017 15:16
To: "Shaul Oreg"
Subject: Resistance to Change Scale - Instrument & Permissions

Dr. Oreg,

I am looking for the official the Resistance to change scale for a doctoral dissertation. Can you describe where the instrument, instructions, and permissions might be obtained?

Thank you

Max Butler

Appendix G.

Resistance to Change Scale

Listed below are several statements regarding one's general beliefs and attitudes about change. Please indicate the degree to which you agree or disagree with each statement by selecting the appropriate number on the scale next to it. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. Your responses will be kept in absolute confidence.

Statement	Strongly disagree	Disagree	Inclined to disagree	Inclined to agree	Agree	Strongly agree
1. I generally consider changes to be a negative thing.	1	2	3	4	5	6
2. I'll take a routine day over a day full of unexpected events any time.	1	2	3	4	5	6
3. I like to do the same old things rather than try new and different ones.	1	2	3	4	5	6
4. Whenever my life forms a stable routine, I look for ways to change it.	1	2	3	4	5	6
5. I'd rather be bored than surprised.	1	2	3	4	5	6
6. If I were to be informed that there's going to be a significant change regarding the way things are done at school, I would probably feel stressed.	1	2	3	4	5	6
7. When I am informed of a change of plans, I tense up a bit.	1	2	3	4	5	6
8. When things don't go according to plans, it stresses me out.	1	2	3	4	5	6
9. If one of my professors changed the grading criteria, it would probably make me feel uncomfortable even if I thought I'd do just as well without having to do extra work.	1	2	3	4	5	6
10. Changing plans seems like a real hassle to me.	1	2	3	4	5	6
11. Often, I feel a bit uncomfortable even about changes that may potentially improve my life.	1	2	3	4	5	6
12. When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.	1	2	3	4	5	6
13. I sometimes find myself avoiding changes that I know will be good for me.	1	2	3	4	5	6
14. I often change my mind.	1	2	3	4	5	6
15. I don't change my mind easily.	1	2	3	4	5	6
16. Once I've come to a conclusion, I'm not likely to change my mind.	1	2	3	4	5	6
17. My views are very consistent over time.	1	2	3	4	5	6

This version is for use with students. For use with employees, the context in items 6 and 9 needs to be changed from school to work:

Item 6: If I were to be informed that there's going to be a significant change regarding the way things are done at work, I would probably feel stressed.

Item 9: If my boss changed the performance evaluation criteria, it would probably make me feel uncomfortable even if I thought I'd do just as well without having to do extra work.

Scoring instructions

Items 4 and 14 need to be reverse coded.

The RTC score is the mean of the 17 items (after reversing the scores of items 4 and 14).
Subscale scores:
Routine seeking: Items 1-5
Emotional reaction: Items 6-9
Short-term focus: Items 10-13
Cognitive rigidity: Items 14-17

Appendix H.

Power Analyses (a priori) for Sample Size Calculation

RQ1: Simple Linear Regression A Priori Central and Noncentral Distributions
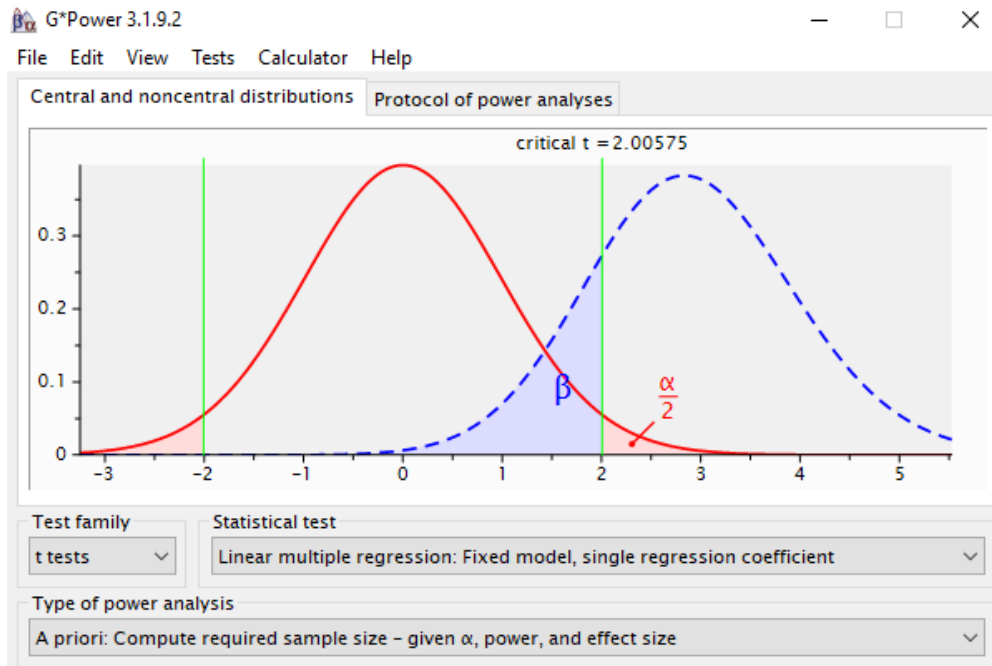
RQ1 Simple Linear Regression A Priori Protocol of Power Analysis
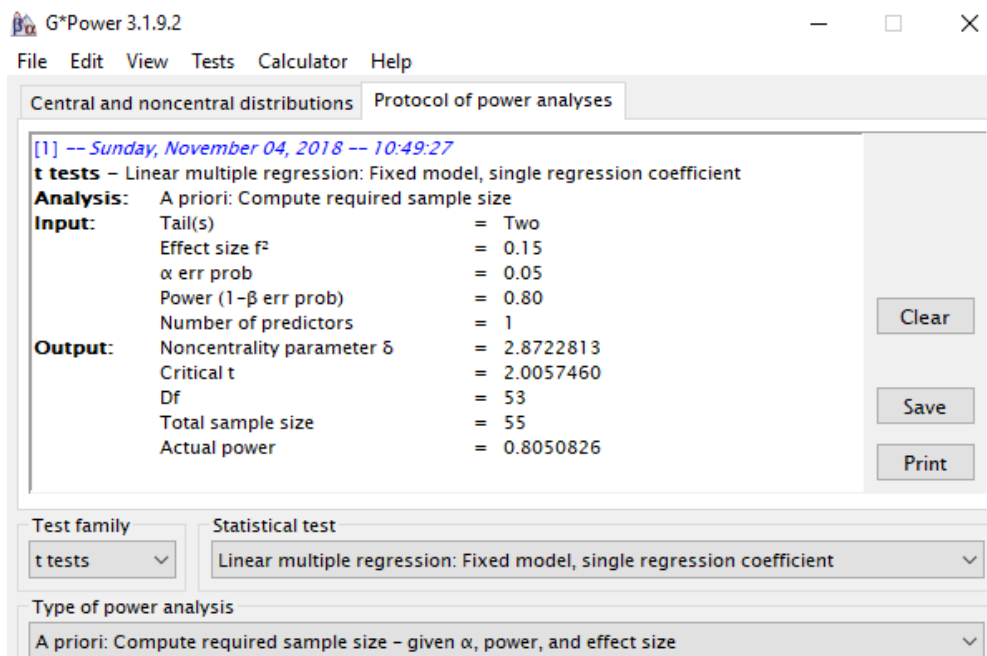
RQ2: Multiple Regression A Priori Central and Noncentral Distributions
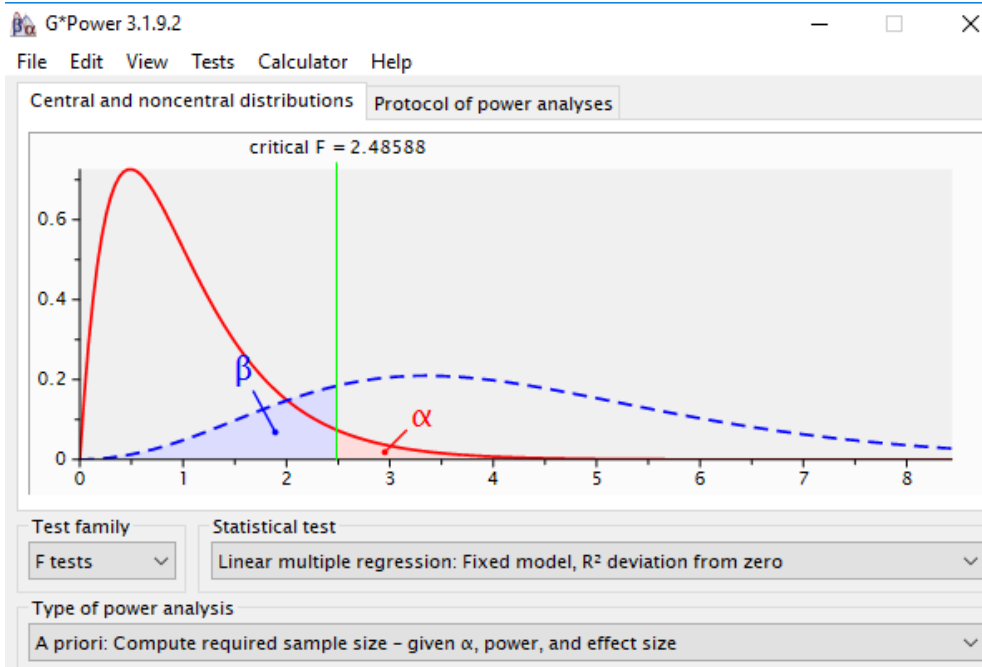
RQ2 Multiple Linear Regression A Priori Protocol of Power Analysis
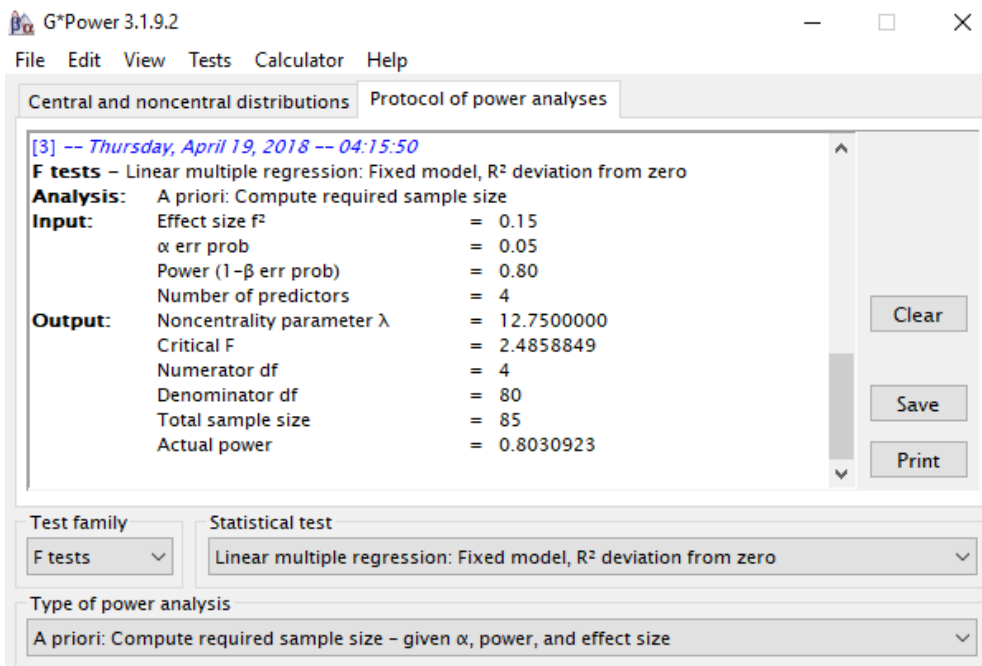
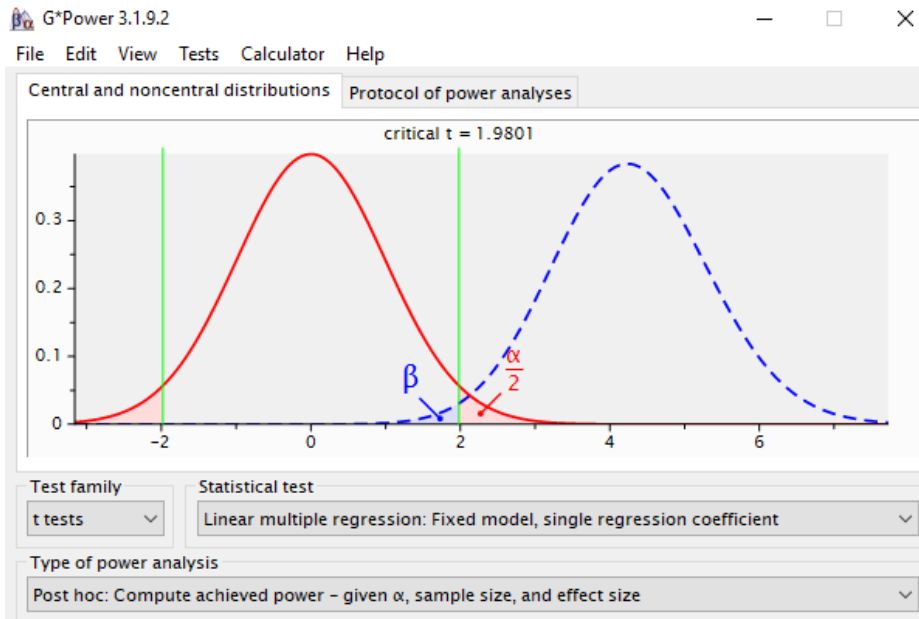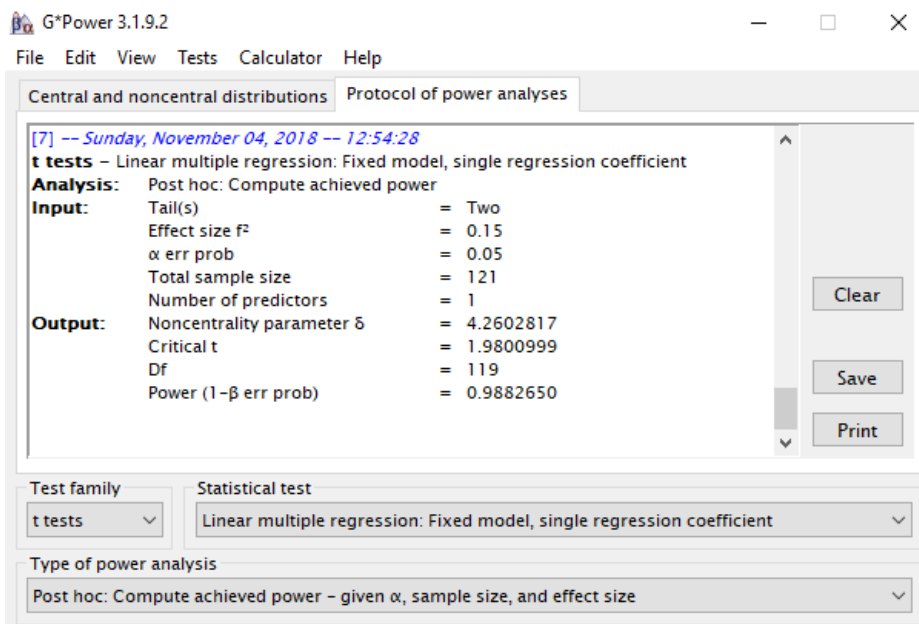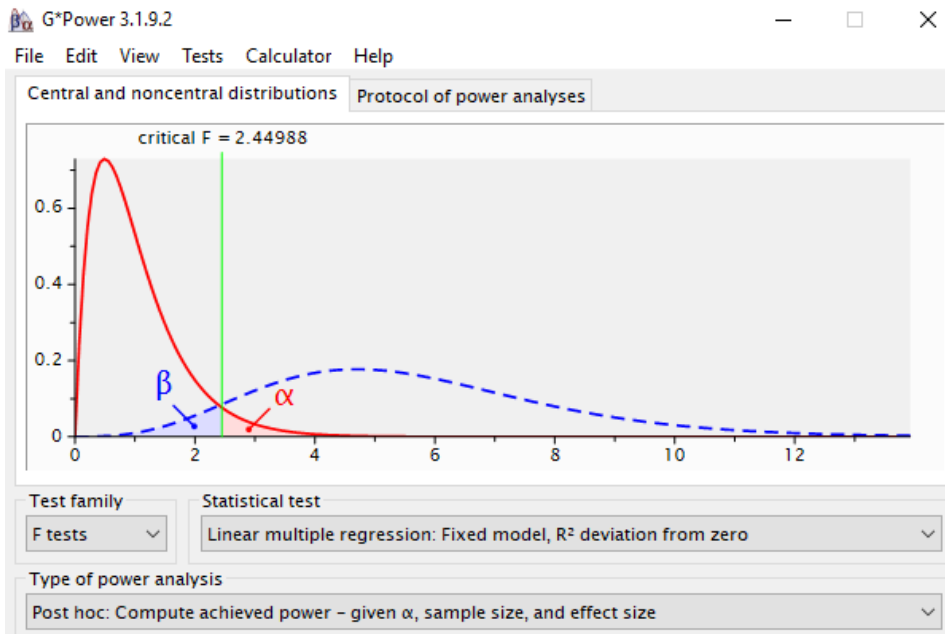RQ3: Moderated Multiple Regression A Priori Central and Noncentral Distributions
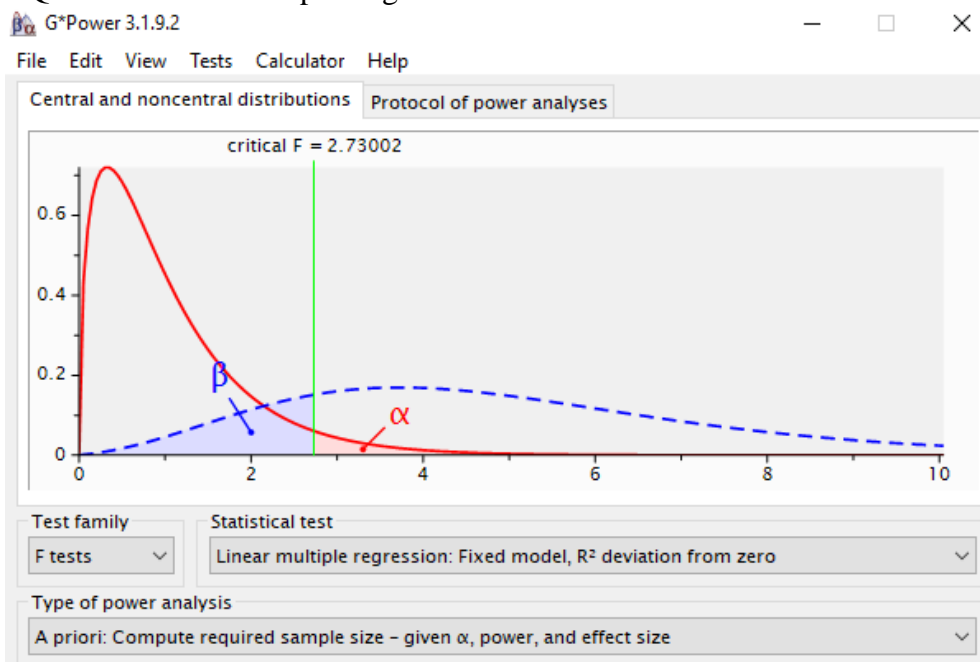
RQ3 Moderator Multiple Linear Regression A Priori Protocol of Power Analysis
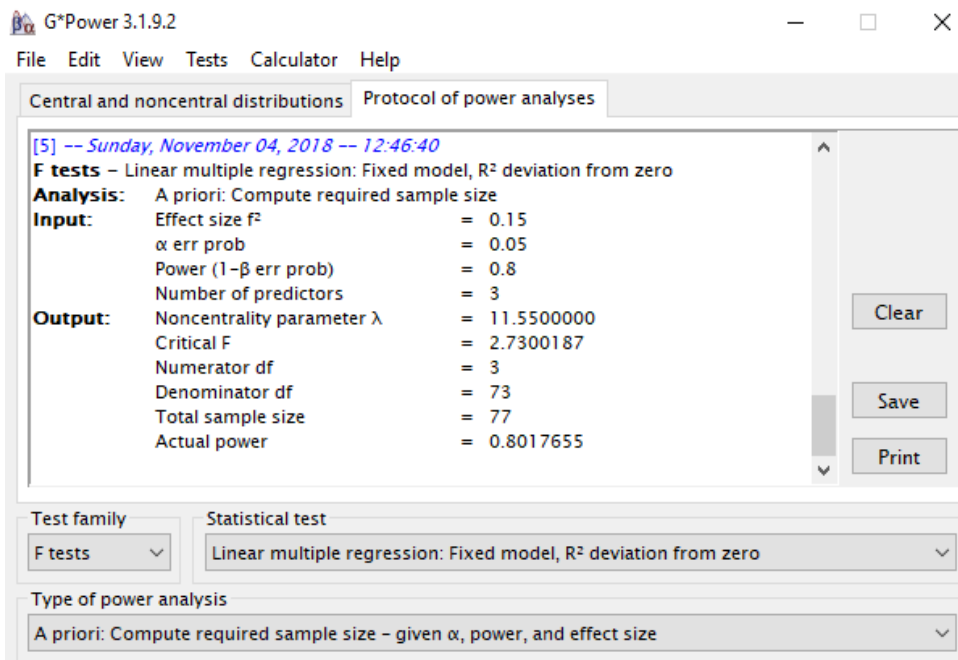
Appendix I.

Post Hoc Power Analysis

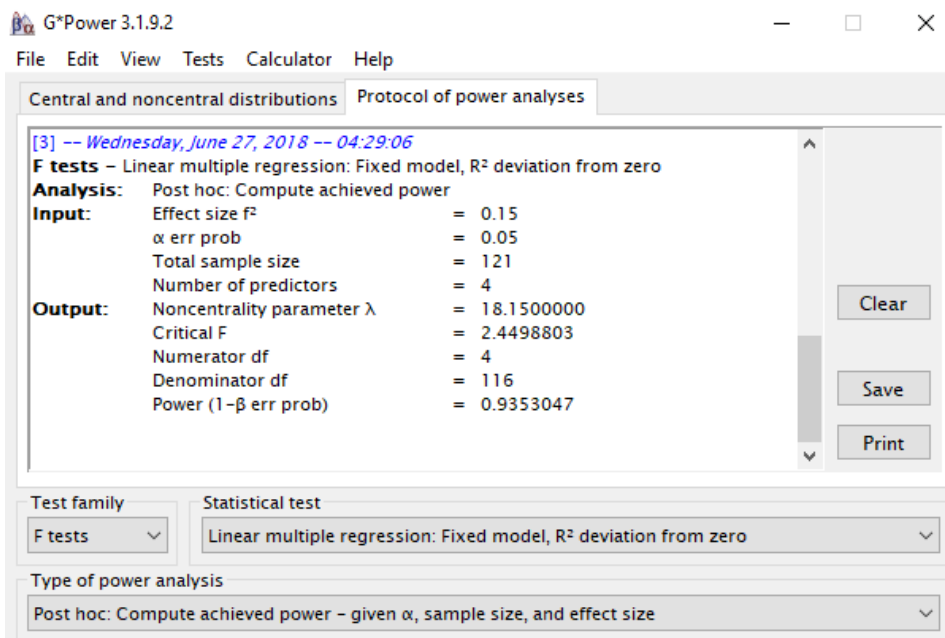RQ1: Simple Linear Regression Post Hoc Central and Noncentral Distributions

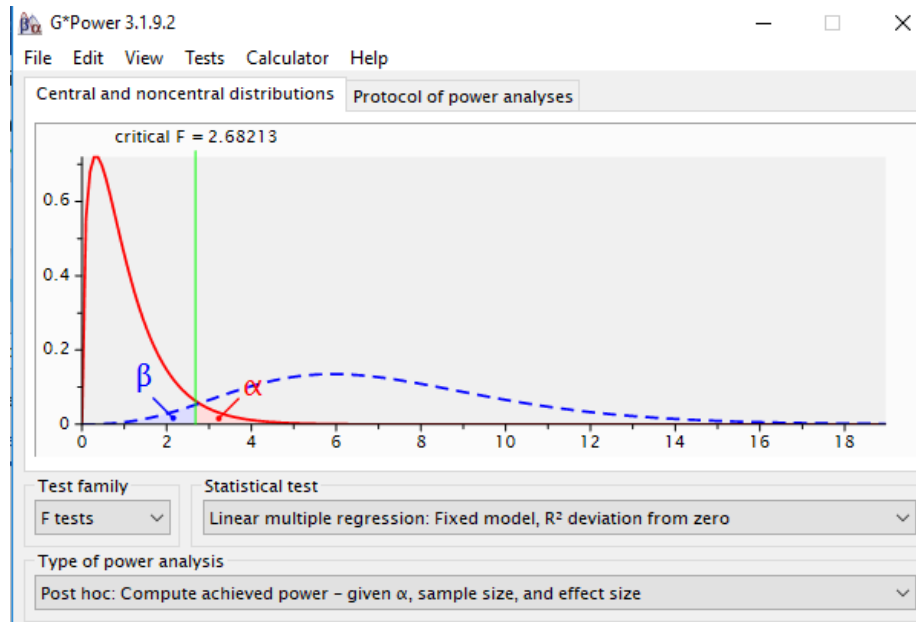RQ1 Simple Linear Regression Post Hoc Protocol of Power Analysis

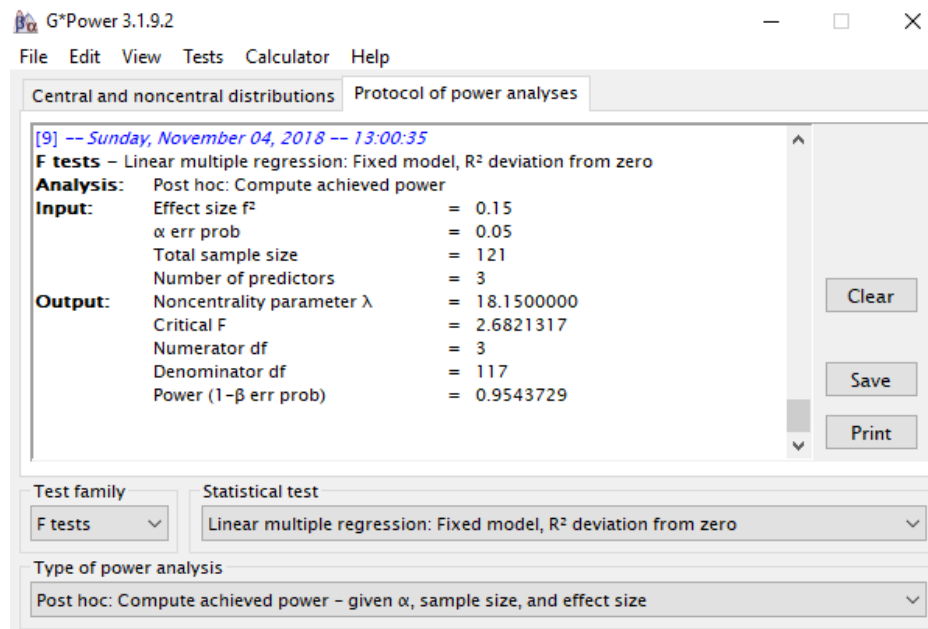RQ2: Multiple Regression Post Hoc and Noncentral Distributions

RQ2 Multiple Linear Regression Post Hoc Protocol of Power Analysis

RQ3: Moderated Multiple Regression A Post Hoc Central and Noncentral Distributions

RQ3 Moderator Multiple Linear Regression Post Hoc Protocol of Power Analysis

Appendix J.

Screening and Demographic Questions

Q1 Please indicate if you are a project manager.
- ○ Yes
- ○ No

Q2 Please indicate if you are PMP® certified by the Project Management Institute (PMI).
- ○ Yes
- ○ No

Q3 Please indicate your gender.
- ○ Male
- ○ Female

Q4 Please indicate your ethnicity.
- ○ Asian or Pacific Islander
- ○ Black or African American
- ○ Hispanic or Latino
- ○ Native American or American Indian
- ○ White
- ○ Other

Q5 Please indicate your years of project manager experience
- ○ Less than 2 years
- ○ 2-7 years
- ○ 8-15 years
- ○ 16-23 years
- ○ 24-29 years
- ○ 30 or more years

Q6 Please indicate your education level.
- ○ High school graduate
- ○ Some college credit, no degree
- ○ Associate degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctorate degree

Q7 Please indicate your age.
- ○ 18-24 years old
- ○ 25-34 years old

❍ 35-44 years old
❍ 45-54 years old
❍ 55-64 years old
❍ 65 years or older

Appendix K.

Histograms and Tests of Normality

Table K1. AQ1 Kolmogorov-Smirnov and Shapiro-Wilk Results

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ALQ_Mean	.09	121	.02	.939	121	.00

a. Lilliefors Significance Correction

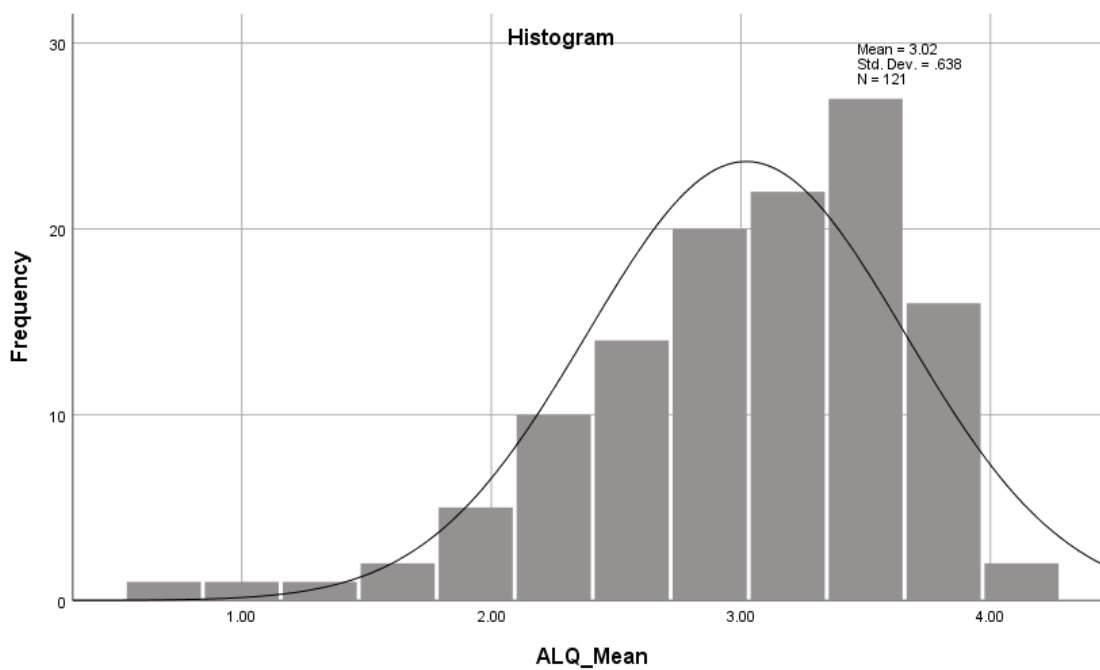*Figure K1.* ALQ histogram

Table K2.

Transparency Kolmogorov-Smirnov and Shapiro-Wilk Results

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Transparency	.11	121	.001	.937	121	.00

a. Lilliefors Significance Correction
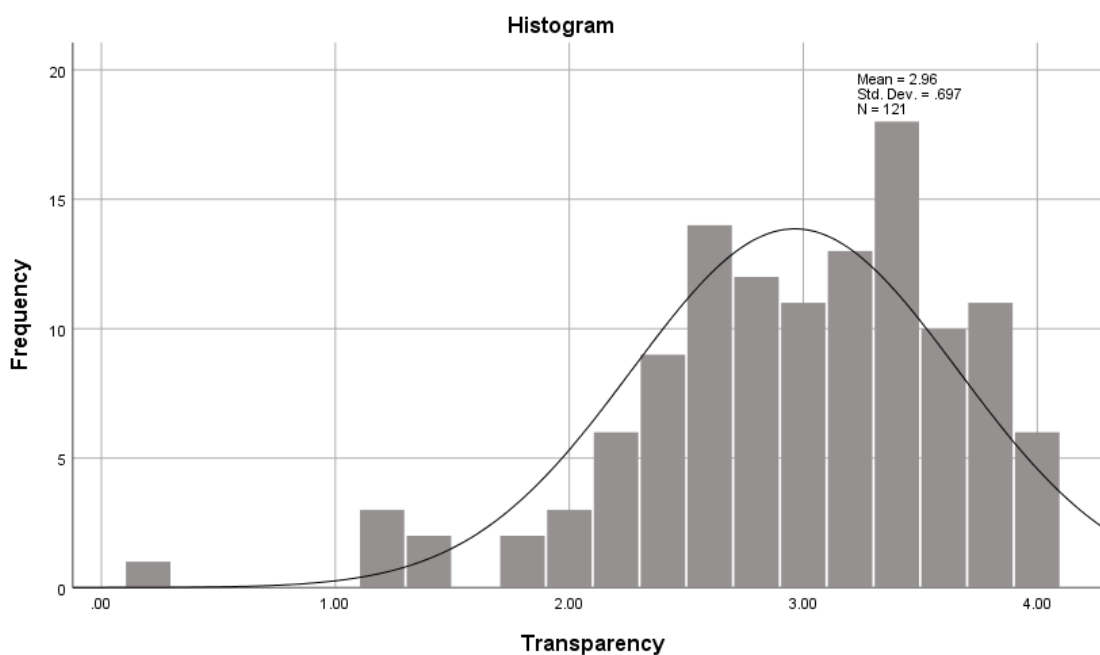

Figure K2. Transparency histogram

Table K3.

Ethical Kolmogorov-Smirnov and Shapiro-Wilk Results

Tests of Normality

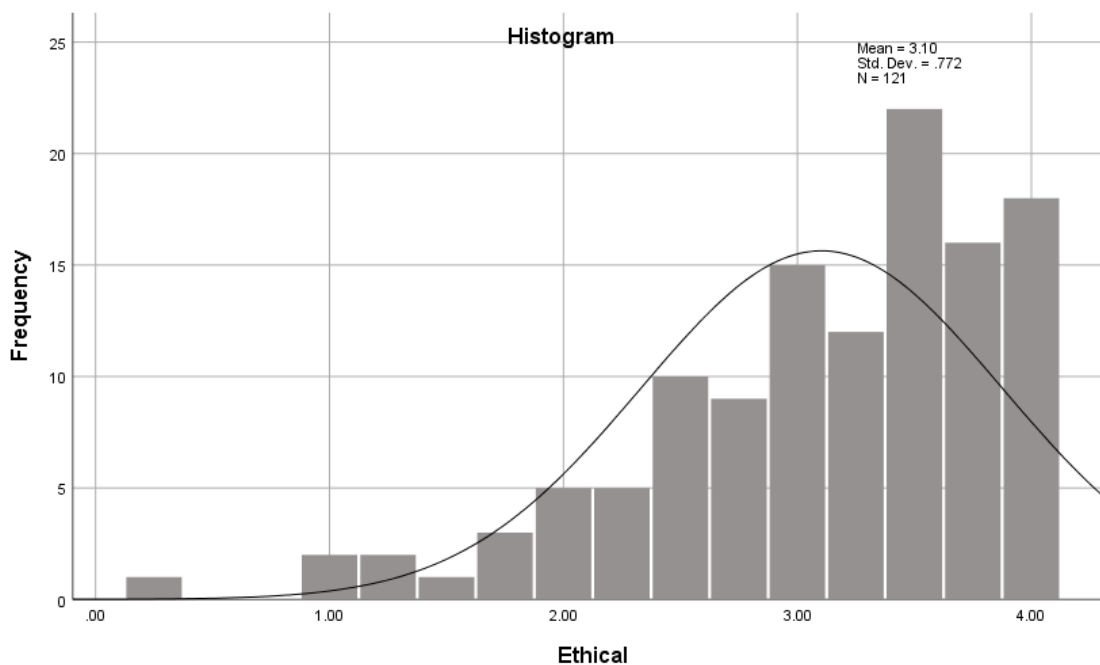|	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Ethical	.16	121	.00	.90	121	.00

a. Lilliefors Significance Correction

Figure K3. Ethical (internalized moral perspective) histogram

Table K4.

Balanced Processing Kolmogorov-Smirnov and Shapiro-Wilk Results
Tests of Normality

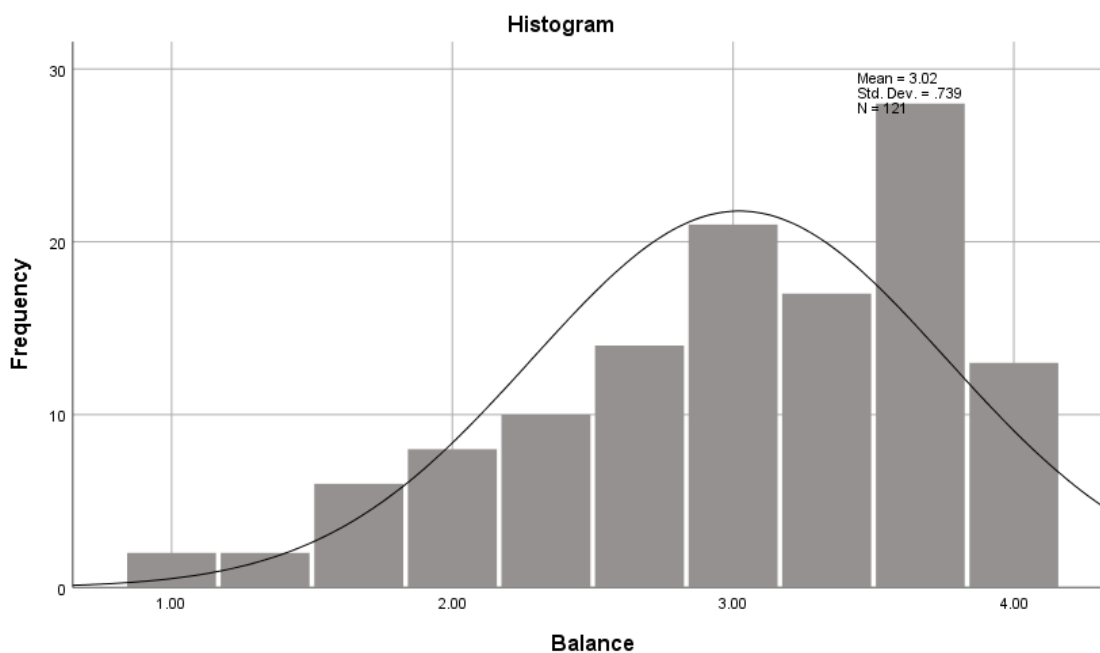|	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Balance	.15	121	.00	.93	121	.00

a. Lilliefors Significance Correction

Figure K4. Balanced processing histogram.

Table K5.

Balanced Processing Kolmogorov-Smirnov and Shapiro-Wilk Results

Tests of Normality

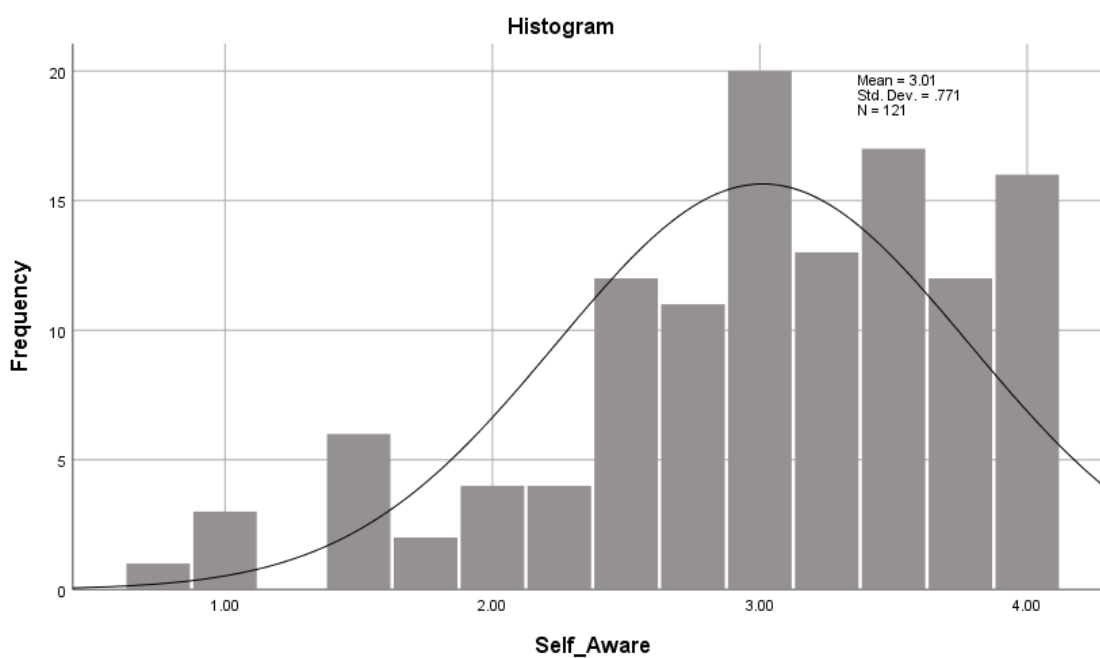|	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Self_Aware	.14	121	.00	.93	121	.00

a. Lilliefors Significance Correction

Figure K5. Self-awareness histogram.

Table K6.

Resistance to Change Kolmogorov-Smirnov and Shapiro-Wilk Results

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
RCS_Mean	.07	121	.20[*]	.98	121	.10

*. This is a lower bound of the true significance.
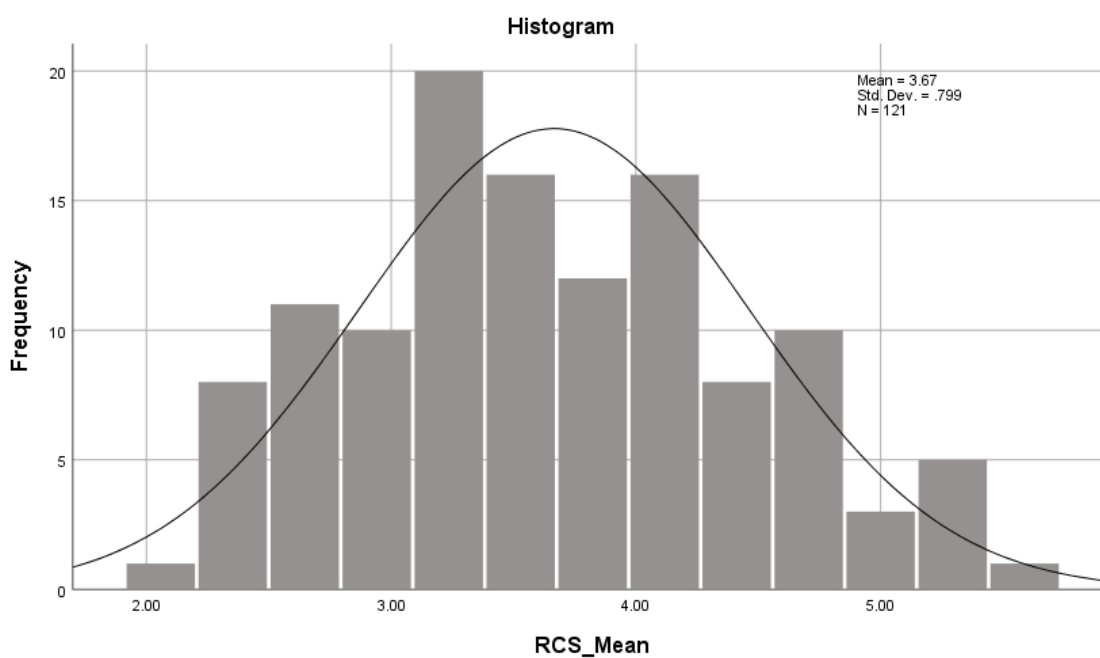
a. Lilliefors Significance Correction

Figure K6. Resistance to change histogram.

Appendix L.

APA Permissions Information

APA Permissions to reproduce data and data displays.

RE: Permission to use Table Data

| From | Adele Hutchinson | 9/25/2017 8:00 AM |
| To | Max Butler | |

Dear Max,

Thank you for your request. Permission is not needed to reuse one table from a journal article. Please see our permissions page for the required credit:

http://www.apa.org/about/contact/copyright/index.aspx#not-required

Best,
Adele

Adele Hutchinson | Permissions Manager
Publications & Databases | 202.682.5152 |
ahutchinson@apa.org

American Psychological Association
www.apa.org

Advancing psychology to benefit society and improve people's lives

-----Original Message-----
From: Max Butler] Sent: Friday, September 22, 2017 3:41 PM To: Permissions <Permissions@apa.org> Subject: Permission to use Table Data

Please consider the attached request to grant permissions for use of the data in a published table in a doctoral dissertation.

Most Respectfully,
Max Butler

Oreg, S., Bayazit, M., Vakola, M., Arciniega, L., Armenakis, A., Barkauskiene, R., . . . van Dam, K. (2008). Dispositional resistance to change: Measurement equivalence and the link to personal values across 17 nations. Journal of Applied Psychology, 93(4), 935-944. doi:10.1037/0021-9010.93.4.935

American Psychological Association

1/1

"APA supports the dissemination of information to aid in the development of science and scholarly research. APA also values and respects its own intellectual property as well as the intellectual property of others. As a result, APA believes it is essential for publishers of scholarly and other proprietary material to develop an efficient and consistent system, based on mutual trust, for granting permissions for both electronic and print publication of proprietary works. Therefore, APA adopts the following guidelines for the use of APA copyrighted content.

Permission is Not Required for the Following: A maximum of three figures or tables from a journal article or book chapter, single text extracts of less than 400 words, series of text extracts that total less than 800 words. No formal requests to APA or the author are required for the items in this clause ("APA," 2018)."

Reference

APA Copyright and Permissions Information. (2018). Retrieved from

http://www.apa.org/about/contact/copyright/index.aspx#not-required

Appendix M.

Springer Nature Permissions Information

SPRINGER NATURE LICENSE
TERMS AND CONDITIONS

Sep 18, 2018

This Agreement between Mr. ("You") and Springer Nature ("Springer Nature") consists of your license details and the terms and conditions provided by Springer Nature and Copyright Clearance Center.

License Number	4432131092947
License date	Sep 18, 2018
Licensed Content Publisher	Springer Nature
Licensed Content Publication	Asian Journal of Business Ethics
Licensed Content Title	Authentic leadership questionnaire (ALQ) psychometrics
Licensed Content Author	Rick Roof
Licensed Content Date	Jan 1, 2013
Licensed Content Volume	3
Licensed Content Issue	1
Type of Use	Thesis/Dissertation
Requestor type	academic/university or research institute
Format	print and electronic
Portion	figures/tables/illustrations
Number of figures/tables/illustrations	2
Will you be translating?	no
Circulation/distribution	<501
Author of this Springer Nature content	yes
Title	The impact of authentic leadership on resistance to change in project managers
Instructor name	Ramon-Olsvaldo GonzalezEd.D
Institution name	Grand Canyon University
Expected presentation date	Nov 2018
Portions	Table 1. Page 60. Table 2 Page 62.
Requestor Location	GLENDALE, AZ 85310 United States
Billing Type	Invoice
Billing Address	GLENDALE, AZ 85310 United States

www.manaraa.com

United States
Attn: Mr. Max Butler

Total 0.00 USD

Terms and Conditions

Springer Nature Terms and Conditions for RightsLink Permissions

Springer Nature Customer Service Centre GmbH (the Licensor) hereby grants you a non-exclusive, world-wide licence to reproduce the material and for the purpose and requirements specified in the attached copy of your order form, and for no other use, subject to the conditions below:

1. The Licensor warrants that it has, to the best of its knowledge, the rights to license reuse of this material. However, you should ensure that the material you are requesting is original to the Licensor and does not carry the copyright of another entity (as credited in the published version).

   If the credit line on any part of the material you have requested indicates that it was reprinted or adapted with permission from another source, then you should also seek permission from that source to reuse the material.

2. Where **print only** permission has been granted for a fee, separate permission must be obtained for any additional electronic re-use.

3. Permission granted **free of charge** for material in print is also usually granted for any electronic version of that work, provided that the material is incidental to your work as a whole and that the electronic version is essentially equivalent to, or substitutes for, the print version.

4. A licence for 'post on a website' is valid for 12 months from the licence date. This licence does not cover use of full text articles on websites.

5. Where **'reuse in a dissertation/thesis'** has been selected the following terms apply: Print rights of the final author's accepted manuscript (for clarity, NOT the published version) for up to 100 copies, electronic rights for use only on a personal website or institutional repository as defined by the Sherpa guideline (www.sherpa.ac.uk/romeo/).

6. Permission granted for books and journals is granted for the lifetime of the first edition and does not apply to second and subsequent editions (except where the first edition permission was granted free of charge or for signatories to the STM Permissions Guidelines http://www.stm-assoc.org/copyright-legal-affairs/permissions/permissions-guidelines/), and does not apply for editions in other languages unless additional translation rights have been granted separately in the licence.

7. Rights for additional components such as custom editions and derivatives require additional permission and may be subject to an additional fee. Please apply to Journalpermissions@springernature.com/bookpermissions@springernature.com for these rights.

8. The Licensor's permission must be acknowledged next to the licensed material in print. In electronic form, this acknowledgement must be visible at the same time as the figures/tables/illustrations or abstract, and must be hyperlinked to the journal/book's homepage. Our required acknowledgement format is in the Appendix below.

9. Use of the material for incidental promotional use, minor editing privileges (this does not include cropping, adapting, omitting material or any other changes that affect the meaning, intention or moral rights of the author) and copies for the disabled are permitted under this licence.

10. Minor adaptations of single figures (changes of format, colour and style) do not require the Licensor's approval. However, the adaptation should be credited as shown in Appendix below.

Appendix — Acknowledgements:

For Journal Content:
Reprinted by permission from **[the Licensor]**: **[Journal Publisher** (e.g. Nature/Springer/Palgrave)**] [JOURNAL NAME] [REFERENCE CITATION** (Article name, Author(s) Name), **[COPYRIGHT]** (year of publication)

For Advance Online Publication papers:
Reprinted by permission from **[the Licensor]**: **[Journal Publisher** (e.g. Nature/Springer/Palgrave)**] [JOURNAL NAME] [REFERENCE CITATION** (Article name, Author(s) Name), **[COPYRIGHT]** (year of publication), advance online publication, day month year (doi: 10.1038/sj.[JOURNAL ACRONYM].)

For Adaptations/Translations:
Adapted/Translated by permission from **[the Licensor]**: **[Journal Publisher** (e.g. Nature/Springer/Palgrave)**] [JOURNAL NAME] [REFERENCE CITATION** (Article name, Author(s) Name), **[COPYRIGHT]** (year of publication)

Note: For any republication from the British Journal of Cancer, the following credit line style applies:

Reprinted/adapted/translated by permission from **[the Licensor]**: on behalf of Cancer Research UK: : **[Journal Publisher** (e.g. Nature/Springer/Palgrave)**] [JOURNAL NAME] [REFERENCE CITATION** (Article name, Author(s) Name), **[COPYRIGHT]** (year of publication)

For Advance Online Publication papers:
Reprinted by permission from The **[the Licensor]**: on behalf of Cancer Research UK: **[Journal Publisher** (e.g. Nature/Springer/Palgrave)**] [JOURNAL NAME] [REFERENCE CITATION** (Article name, Author(s) Name), **[COPYRIGHT]** (year of publication), advance online publication, day month year (doi: 10.1038/sj.[JOURNAL ACRONYM])

For Book content:
Reprinted/adapted by permission from **[the Licensor]**: **[Book Publisher** (e.g. Palgrave Macmillan, Springer etc) **[Book Title]** by **[Book author**(s)**] [COPYRIGHT]** (year of publication)

Other Conditions:

Version 1.1

Questions? customercare@copyright.com or **+1-855-239-3415 (toll free in the US) or +1-978-646-2777.**