Walden University

College of Management and Technology

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David Starnes

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Walden University
2016

Abstract

Exploring the Influence of Context on Resistance to Organizational Change within a Virtual Faculty Workforce

by

David B. Starnes

MA, Davenport University, 2004

BS, Davenport University, 2002

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Applied Management Decision Sciences

Walden University

May 2016

Abstract

Managers must know how to operationalize change, as well as manage the attitudes and emotions associated with transforming the organization. Managing the culture involved with organizational change is a challenge in any environment, and perhaps even more so when managing a virtual workforce. The problem addressed in this study was that while there is considerable research on organizational change, there is little research concerning the influence of trust in leadership, frequency of change, and history of change on virtual faculty resistance to change in higher education. As a result, there is a lack of knowledge and understanding regarding how context influences a virtual faculty member's resistance to change. The purpose of this study was to gain insight into how three dependent variables (trust in leadership, frequency of change, and history of change) impact a dependent variable (virtual faculty resistance to change), measured using an adapted survey. The study was based on the theory of planned behavior, the theory of attribution, and the transactional stress model. Data were collected from 189 online faculty and the relationships between variables were evaluated using multiple linear regression. Trust in leadership regarding integrity and ability along with gender were significantly associated with resistance to change. Frequency and history of change did not have a significant relationship with resistance to change. The research has potential to effect positive social change by contributing to a greater understanding among higher education administrators during the planning, communication, and implementation of change of how trust in leadership, frequency of change, and history of change impact online faculty response to change.

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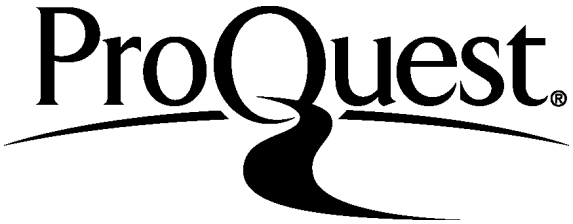

Dedication

To my wife, Sheila for her unending love and support. My doctoral journey would not have been possible without her beside me. To my dear friend and colleague, Dr. Tom Boyd, who's encouragement and guidance inspire me every day.

Acknowledgments

This journey was made possible by the support, guidance, and encouragement of many people. I would like to thank my committee chair and mentor, Dr. Branford McAllister, for patiently guiding me through the dissertation process. Dr. McAllister's knowledge and assistance were invaluable. I also want to thank my committee member and former committee chair, Dr. Robert Kilmer, for his guidance over the years spent getting to this point. His feedback and advice had a tremendous influence on my dissertation. The timely recommendations made by Dr. Godwin Igein (URR) were greatly appreciated and contributed to the quality of the study. Thank you to my entire committee for challenging me to be a better scholar and practitioner. A special thank you to my peers and friends, who provided encouragement and motivation throughout the journey.

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Chapter 1: Introduction to the Study

The phenomenon of change is ongoing for organizations striving to operate as effectively and efficiently as possible. Recognizing and understanding how employees react to change is critical to the success of planned organizational change. Also important is the recognition that the context in which organizational change takes place can influence the outcome of a change initiative. Organizations use context analysis to evaluate the internal and external environment in which they operate (Walker, Armenakis, & Bernerth, 2007, p. 763).

The focus of this quantitative study was an examination of how internal contextual factors, and specifically the independent variables of trust in leadership, frequency of change, and history of change, can impact the dependent variable (resistance to change) for virtual faculty. The dependent variable and independent variables are summarized in Table 1. Chapter 1 includes an explanation for why these issues present a problem that requires examination and why it is important for advancing the discipline, adding to the body of knowledge, and bringing about positive social change.

Table 1

Study Variables

Dependent Variables (n = 1)	Independent Variables (n = 3)
Resistance to Change	Trust in Leadership Frequency of Change History of Change

The following sections include the research questions and a roadmap describing the methodology used to accomplish the proposed study. The potential positive social

change from this research includes (a) reduced employee stress due to change, (b) improved subordinate/manager relations during change, and (c) greater understanding of how trust in leadership, frequency of change, and history of change impacts the individual. Organizational change can take a toll on employee attitudes, emotions, and subordinate/manager interactions. Gaining a greater understanding of how contextual factors impact the individual can aid in improving relationships and reduce the stress often associated with change.

Background of the Study

The phenomenon of change is an inevitable outcome for any organization wishing to grow and achieve its objectives (Agboola & Salawu, 2011, p. 235). An organization's needs typically drive planned change, but change also occurs as a reaction to unexpected events. How often change occurs, or the significance of the impact, is not always in the control of the organization's leadership, which can affect the success of change initiatives. As an example, Rafferty and Griffin (2006) identified frequency and impact as important components of change that may be significant to individuals. When change is more frequent, employees are more likely to see it as continuous rather than as separate events. Rafferty and Griffin argued that individuals are more likely to experience anxiety and fatigue when frequency causes change to be unpredictable (p. 1154). In addition, Herold, Fedor, and Caldwell (2007) determined that pervasive change can impact an individual's willingness to support current and future change (p. 948).

An organization's history of change can also influence employee acceptance or resistance to change. A history of unsuccessful change initiatives may result in a lack of trust in leadership's ability to select, plan, and implement organizational change. Bordia,

Restubog, Jimmieson, and Irmer (2007) argued that a history of poor change management will result in low levels of expectancy for the success of current or future change initiatives (p. 3).

Trust is often found to be an antecedent of commitment to change (Herold, Fedor, Caldwell, & Liu, 2008; Michaelis, Stegmaier, & Sonntag, 2009). Organizations with high trust levels are those that communicate honest information about the organization's performance and provide the rationale for major management decisions. Organizations with low trust levels are more likely to have employees who are defensive, competitive, evasive, or uncertain in their interactions. In an environment of low trust, organizations will experience a lack of commitment and a lack of clear goals (Denton, 2012, p. 19).

The real world problem is that resistance to organizational change is often associated with reduced productivity, increased cost, and decreased job satisfaction. In addition, managers often do not understand the potential impact of the contextual factors of trust in leadership, frequency of change, and history of change on resistance to organizational change. In higher education, researchers contend that resistance to change slows reform, thwarts efforts to improve student learning, and hinders the use of advanced technology (Caruth & Caruth, 2013, p. 14; Tagg, 2012, p. 8). Faculty working in on-campus or online environments are facing tremendous change today. All are subject to similar fears and concerns associated with workplace change; however, virtual faculty have additional factors that may influence their reactions to organizational change (Snyder, 2012, p. 12). Virtual workers must contend with being separated from face to face contact with administrators. This separation can leave them feeling isolated, out of

touch with what is happening, and even less in control of their situation than on campus faculty who see their coworkers, department chairs, and other administrators regularly.

Another factor to consider is that establishing and maintaining trust in leadership is particularly challenging in remote working environments. Grant, Wallace, and Spurgeon (2013) found that trust is a key influence on virtual employee effectiveness, and that all teleworkers benefit when there is a trusting relationship with managers (p. 529).

Organizations that do not develop an understanding of contextual factors, specifically the independent variables of trust in leadership, frequency of change, and history of change, may experience increased levels of resistance during change (Boyne & Meier, 2009; Herold et al., 2007; Rafferty & Griffin, 2006; Stensaker & Meyer, 2012). Organizations that employ a virtual workforce, and specifically administrators in higher education, must be aware that virtual employees may have unique needs related to organizational change.

Problem Statement

As discussed in the first part of this chapter and in greater detail in the Chapter 2 literature review, resistance to change can have a positive effect on an organization; however, more often, resistance is cited as an explanation for the problems managers face when implementing change, and for the failure of planned change (Erwin & Garman, 2010, p. 39, Furst & Cable, 2008, p. 453). The organizational development body of knowledge includes a robust collection of research on the effects and management of change. The collective works apply to most individuals and organizations; however, elements of the phenomenon are unique when managing change affecting faculty in

higher education (Grant, 2003, p. 72; Tagg, 2012, p. 8; Zell, 2003, pp. 73-74), and perhaps more unique when the faculty work in a virtual environment.

The selection of trust in leadership, frequency of change, and history of change as contextual influencers of resistance to change was based on evidence described in the literature review (Herold et al., 2008; Mayer & Davis, 1999; Oreg, 2003; Rafferty & Griffin, 2006), and on the organizational change environment in the case study university. My reasons for choosing the independent variables from among many identified causes of resistance to change are addressed in detail in Chapter 3.

Despite the general assumption that organizational change should be effectively managed, resistance to change is still a major concern for today's universities and colleges (McBride, 2010, p. 39; Qian & Daniels, 2008, p. 328; Zell, 2003, p. 73). A possible cause for this is a gap in the research, specifically, a lack of empirical evidence to illuminate the importance of considering context when planning organizational change. While there is a considerable body of research on organizational change, there is little research providing empirical data concerning the influence of context on resistance to organizational change in higher education, especially on how virtual faculty are affected. As a result, there is a lack of knowledge and understanding regarding how trust in leadership, frequency of change, and history of change influence a virtual faculty member's resistance to change. My study helps fill the gap concerning resistance to change in a virtual workforce, and how context affects faculty resistance to change.

Purpose of the Study

The purpose of this quantitative study was to gain insight into how trust in leadership, frequency of change, and history of change impact one of the most commonly

believed causes for organizational change failure: resistance to change. Specifically, the focus of my study was to explore the relationship between each individual independent variable on the dependent variable (resistance to change). The independent variables are (a) trust in leadership, (b) frequency of change, and (c) history of change. In addition, I used descriptive statistics to examine the relationship of demographic information including gender, age, employment classification, and length of employment on resistance to change.

Research Question and Hypotheses

The following research question and hypotheses were designed to explore the relationships between the independent variables of trust in leadership, frequency of change, and history of change, and the dependent variable, resistance to change.

RQ: What is the relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable, resistance to change, among online university faculty?

H_0: There is no relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable, resistance to change, among online university faculty.

H_a: There is a relationship between at least one of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable, resistance to change, among online university faculty.

Theoretical and Conceptual Framework for the Study

The underlying theories and framework for this study are the theory of planned behavior, the theory of attribution, and the transactional model of stress. Each was chosen for their association with trust in leadership, frequency of change, history of change, and resistance to change. The independent and dependent variables and their potential relationships are shown in Figure 1.

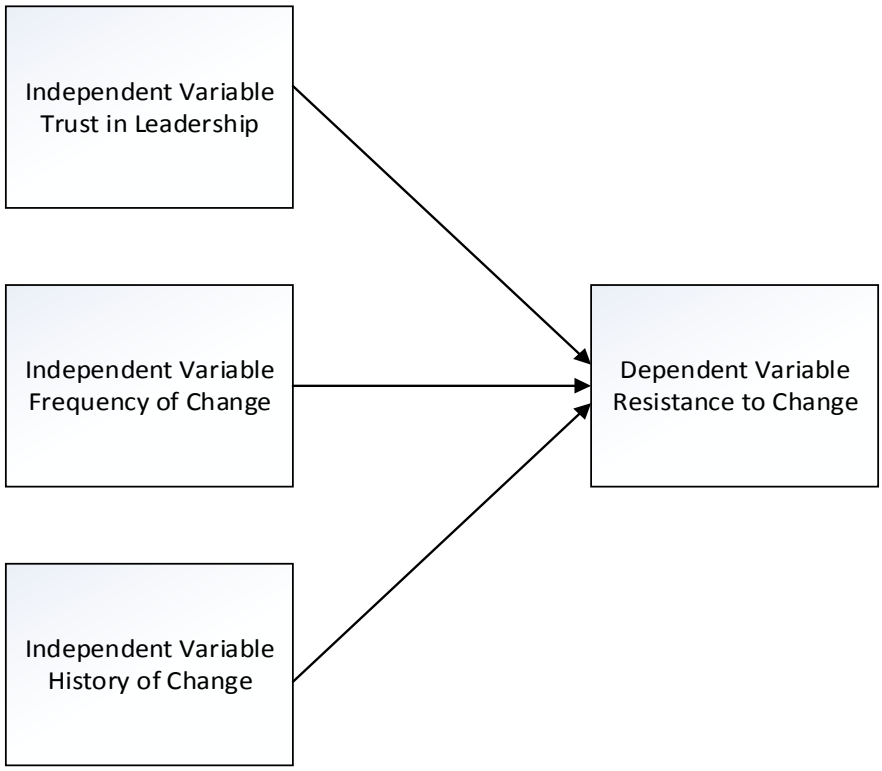

Figure 1. Independent and Dependent Variables

Theory of Planned Behavior

The theory of planned behavior is an extension of Ajzen and Fishbein's (1980) reasoned action approach (p. 5). Ajzen (1985) proposed the theory of planned behavior, which expands the theory of reasoned action to deal with behaviors influenced by factors

beyond the control of some people, such as willpower, skills, abilities, presence of mind, and opportunity (p. 30). Ajzen (1991) explained that a central theme in the theory of planned behavior is the intention to perform a specific behavior. Intentions include the motivational factors that influence an individual's behavior. Generally, a strong intention to engage in a given behavior will lead to the performance of the behavior (p. 181). The theory of planned behavior provides a useful framework for research on human social behavior (p. 206).

Theory of Attribution

Weiner's (1974) theory of attribution assumed that individuals want to understand why an event or outcome takes place. Weiner (1986) explained that integral to the attribution approach is determining causal perceptions, particularly the causes for success or failure in achievement-related situations (p. 22). According to Weiner (1985), once a cause is determined, it allows for effective self-management and becomes a guide for future actions. A successful outcome can lead to an effort to repeat the prior causal network. However, an undesired outcome, such as an economic loss or a failed exam, will likely lead to an effort to alter the cause, thus producing a more positive effect (p. 549).

Transactional Stress Model

Lazarus and Folkman's (1984) transactional model provides a framework for understanding the emotions employees experience during the process of organizational change. In a comparison to other models, Lazarus and Folkman explained, "In contrast . . . the transactional model views the person and the environment in a dynamic, mutually reciprocal, bidirectional relationship" (p. 293). A basic proposition advanced in the model

is that interactions between people and environment can form an appraisal of threat (p. 326); or in other words, stressful situations. In a continuation of Lazarus and Folkman's previous work, Lazarus and Cohen-Charash (2001) argued that organizations can influence the management of stressful situations through the values and practices of the organization's culture. The transactional model provides a useful framework for studying the influence of level of change on resistance to change (p. 57).

Theoretical Foundation Conclusion

The study theories and conceptual framework were chosen based on their association with the research hypotheses stated in the Research Questions and Hypotheses section. Chapter 2 includes a more detailed explanation of the theory of planned behavior, theory of attribution, and the transactional model, as well as how they help to understand resistance to change.

Nature of the Study

In this quantitative case study, I used the cross-sectional survey method to answer the research questions. The participants of the study were online faculty members at a large university. The faculty members were from a variety of schools within the university and represented multiple disciplines. I conducted the study at one large online university with a known history of faculty working virtually and experiencing significant change. The chosen option offered the greatest opportunity to include participants who have experience with the constructs used in forming the research question. For additional information on the rationale for using one university, see the Methodology section in Chapter 3.

The study included data collected through distribution of an Internet survey. Faculty responses included demographic information, and all surveys were anonymous. I used an online survey due to its convenience for the participants and the researcher. The faculty participants in this study are located across the country, making an online survey a cost-effective method.

The survey instrument for this study was a compilation of questions from four existing scales measuring the independent variables of trust in leadership, frequency of change, and history of change, and the dependent variable, resistance to change:

1. Perceptions of organizational change survey (Rafferty & Griffin, 2006).
2. Change leadership survey (Herold et al., 2008).
3. Measures of trust and trustworthiness survey (Mayer & Davis, 1999).
4. Resistance to change survey (Oreg, 2003).

The questionnaire authors provided permission for use of the instruments in this study (Appendix A).

Definitions

In this section I provide concise definitions of variables and terms that may have multiple meanings. Table 2 depicts the study variables and the associated scholarly study.

Table 2

Variables and Associated Scholarly Studies

Variable	Associated Research Scholar
Trust in leadership	Mayer and Davis (1999)
Frequency of change	Rafferty and Griffin (2006)
History of change	Herold, Caldwell, and Liu (2008) Rafferty and griffin (2006)
Resistance to change	Oreg (2003)

Independent Variables

Trust in leadership. Dirks and Skarlicki (2004) conceptualized trust in leadership as the follower's positive expectations concerning leader behavior and intentions as they affect the follower (p. 21). This construct was measured using Mayer and Davis' (1999) measures of trust and trustworthiness survey instrument, which uses a Likert interval scale. I further define the measurement and scale in Chapter 3.

Frequency of organizational change. Rafferty and Griffin (2006) identified frequency of change as capturing employee perceptions regarding how often organizational change occurs in their workplace (p. 1154). This construct was measured using Rafferty and Griffin's perceptions of organizational change survey instrument, which uses a Likert interval scale. I further define the measurement and scale in Chapter 3.

History of change. An organization's record of previous change efforts; typically thought of in terms of successes and failures as a result of content or process. This construct was measured using Herold, Caldwell, and Liu's (2008) change leadership survey instrument, which uses a Likert interval scale; and Rafferty and Griffin's

perceptions of organizational change survey instrument, which uses a Likert interval scale. I further define the measurement and scale in Chapter 3.

Dependent Variable

Resistance to change. Burke (2002) asserted that the experience of change is not necessarily resistance to the change itself as much as it is resistance to losing something personally valued. The individual resists movement from something known to something unknown or untried (p. 92). This construct was measured using Oreg's (2003) resistance to change survey instrument, which uses a Likert interval scale. I further define the measurement and scale in Chapter 3.

Intervening Variables

There may be intervening factors on the individual or organizational level that influence resistance to change**.** For example, Oreg (2003) identified emotional reaction and cognitive rigidity as factors that may have an effect on an individual's level of resistance. Smollan, Sayers, and Matheny (2010) asserted that a recent or coinciding change having a perceived negative effect could impact an employee's resistance to a new change initiative. Qian and Daniels (2008) posit that cynicism and quality of information may play a role in resistance. Each of these, along with other variables, could be shaped by the independent variables of trust in leadership, frequency of change, and history of change, and thus have an influence on the dependent variable, resistance to change. These potential intervening variables could have made the scope of this study too broad, and thus were not addressed; however, they do provide opportunities for further study.

Additional Factors to Consider

I also collected demographic information for this study. Four questions placed at the end of the survey asked participants to specify gender, age, employment classification, and length of employment. The information gathered from demographic questions provided a characterization of the sample.

Definition of Terms

Context. Walker et al., (2007) described context, as it relates to organizational change, as pre-existing forces in both the internal and external environments; for example, competition, governmental regulation, or technology change (p. 763).

Contextual factors. For this study, the contextual factors included trust in leadership, frequency of change, and history of change.

Leader-Member Exchange (LMX). Lunenburg (2010) explained that LMX theory focuses on relationships between a leader and each individual subordinate, rather than the leader's relationship with a group. Each individual relationship will likely differ. Therefore, some subordinates will have better interpersonal relationships with the leader than other individuals experience (p. 1).

Locus of control. Devos, Buelens, and Bouckenooghe (2007) defined locus of control as a person's perception of their ability to exercise control over their environment. Individuals with an internal locus of control believe that they control their own environment and success. Those with an external locus of control believe that events in their lives are outside of their control (p. 613).

Openness and honesty. Shockley-Zalabak, Morreale, and Hackman (2010) described openness and honesty as a leader's desire to have processes and practices in place that encourage sharing of information and issues with both internal and external stakeholders (p. 90).

Planned change. Lippett, Watson, and Westley (1958) described planned change as change that develops from calculated decisions to bring about organizational improvements, achieved with assistance from professional guidance (p. vi).

Trust. Mayer, Davis, and Shoorman (1995) wrote that, "The definition of trust . . . is the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (p. 712).

Trustworthiness. Frazier, Johnson, Gavin, Gooty, and Snow (2010) described trustworthiness as the individual's perception of the characteristics of the trustee, which influence the level of vulnerability the trustor has regarding the trustee (p. 43).

Assumptions

The following assumptions are necessary due to the nature of survey research. These assumptions may have affected the study; however, they are out of the control of the researcher.

1. The study sample was representative of the total population of faculty at the university.

2. Respondents answered the survey questions openly and honestly.
3. The participants in the study have experiences that permitted them to accurately respond to the survey questions.

Scope and Delimitations

Trust in leadership, frequency of change, and history of change has been shown to influence many aspects of organizational life. For my study, I compared these three constructs to resistance to change. The focus of this study was to determine how trust in leadership, frequency of change, and history of change impact the ability to successfully implement change in organizations, and specifically in a higher education environment. Very little research has been conducted on implementing change in colleges and universities, and none was found specific to online faculty experiences. My research is unique, as it focused only on virtual faculty perceptions of change in the workplace. My study also covered new ground as it focused on how contextual factors affect faculty resistance to change in higher education.

The participants in this study included both full-time and adjunct faculty from a cross-section of the university's five schools. I used an online survey to ask participants questions designed to measure perceptions of each construct. The survey participants were faculty members and did not include any administrators or support staff from the university. My study included only virtual faculty working in an online environment. The survey included demographic questions, which were designed to describe individual characteristics of the survey respondents. Demographic information included gender, age, employment classification, and length of employment.

Limitations

The participants in this study were all faculty members at an online university. The faculty at this university faces the same or similar challenges faced by other online universities; however, the results of this study are not generalizable to all institutions of higher education. Specific changes made or taking place at the university may be different from other organizations. The organization's culture may also influence the way respondents answer the survey questions. Regression analysis attempts to identify the relationship between a dependent variable and one or more independent variables. Regression analysis reveals relationships between variables; however, there will not necessarily be a causal relationship as associations could be a result of many causes, including variables not measured (Tabachnick & Fidell, 2000). The survey for this study was administered at a single point in time, which also makes any predictive relationships between variables unclear.

Survey methodology provides several advantages, but can also bring limitations to a study. A significant concern is response rate. Requests to participate in surveys have become commonplace, and are often sales pitches in disguise. This large number of surveys from so many sources reduces the likelihood of an individual responding (McBurney & White, 2010, p. 255). Leedy and Ormond (2005) asserted that a majority of people receiving a questionnaire do not return them. Therefore, faculty who do not participate in the study may have different opinions which could change the study data. The use of survey research also imposes a time constraint on participants. Respondents who are working under stressful conditions and who already feel overwhelmed may not feel they have time to complete a survey. In addition, there is potential for response bias

if participants answer based on what they think the researcher wants to see, rather than on what they actually believe to be true. Respondents may also see an advantage to indicating that frequent or significant change has a negative effect on the organization, hoping that management might reduce the number or degree of organizational changes. Anonymity should address any respondent concerns about compliance or questions perceived as threatening; however, the risk of manipulative responses is out of the control of the researcher (p. 185).

Significance of the Study

In order for an organization to survive turbulent times and flourish when conditions warrant, the members must be ready and willing to accept and embrace change (Agboola & Salawu, 2011; Seijts, 2010). To support readiness for change, the organization's leaders must not only be aware of the organization's culture, but must also strive to shape it to the benefit of all of its stakeholders. The attitudes and emotions of members at all levels of the organization provide the foundation for supporting the existing and future operations. Using a quantitative approach, this study focused on the relation between the constructs of (a) trust in leadership, (b) frequency of organizational change, and (c) history of change, on an individual's resistance to change.

With the knowledge from this study, leaders may be better prepared to apply the findings to strategies for leading change in all areas of the organization. Gaining knowledge on how the context of change affects resistance to change can aid in putting new and better communication plans into practice. Understanding how trust in leadership, frequency of change, and history of change can influence the level of resistance to change can aid in determining leadership strategy during times of change and times of stability.

The potential social impact of this study may include (a) reduced employee stress due to change; (b) improved subordinate/manager relations during change; and (c) greater understanding of how trust in leadership, frequency of change, and history of change impact the individual.

Summary

Resistance to change is one of the most often cited reasons for an organization's failed change initiative, and there is wide variability in the perception of its association with failure, and how it is operationalized (Erwin & Garman, 2010, p. 39). The organizational change literature includes many studies where change saturation is the research focus; however, there is little research available on how trust in leadership, frequency of change, and history of change impact resistance to change.

The virtual faculty members in this study were not unlike members of most organizations in today's environment of constant change; they face challenges associated with improving quality, reducing costs, and constant innovation. The purpose of this study was to investigate the relationships between the trust in leadership, frequency of change, and history of change, on resistance to change in the virtual workplace. I grounded my research on the theory of planned behavior and attribution theory. The transactional stress model (Lazarus & Folkman, 1984) was also important to the theoretical framework.

The research included the use of surveys. Virtual faculty members at a large online university completed questionnaires designed to provide information on perceptions of (a) trust in leadership, (b) frequency of change, (c) history of change, and (d) resistance to change. Participants included full-time and adjunct faculty from all

schools within the university, with each bringing their own historical views, attitudes, and emotions to the study. Both faculty and administrators will benefit from a better understanding of how frequency and magnitude of change can influence workplace satisfaction and effectiveness. Chapter 2 includes a literature review designed to support the research outlined in Chapter 1.

Chapter 2: Literature Review

This chapter includes a literature review based on studies focused on contextual factors that may influence organizational resistance to change. Change is a common part of workplace life and continues to occur frequently in today's organizations. Recognizing and understanding employee reactions to change is a critical component of successful planned organizational change. Organizations make changes due to innovation, economic conditions, globalization, and an increasingly unstable and disruptive business environment (Chiang, 2010, p. 157), as well as limited resources, privatization and deregulation (Agboola & Salawu, 2011, p. 235). No organization is spared from the need to implement change, and the need for understanding the effects of change management has never been more important (Herold et al., 2008). Also, Furst and Cable (2008) argued that change has become a fixture for most organizations and thus, managers must be well-versed in the sources of employee resistance to meet the challenges of implementing change (p. 453).

The real world problem in my research was that resistance to organizational change is often associated with reduced productivity, increased cost, and decreased job satisfaction. The research problem was that higher education managers often do not consider the potential impact of the contextual factors of trust in leadership, frequency of change, and history of change on resistance to change. While there is a considerable body of research on organizational change, there is little research providing empirical data concerning the influence of context on resistance to organizational change in higher education, especially on how virtual faculty are affected. In order to understand how trust in leadership, frequency of change, and history of change influence a virtual worker's

resistance to change, I conducted a quantitative case study to determine the potential detrimental effects of these contextual factors.

Literature Search Strategy

The literature review included peer-reviewed sources obtained from multiple databases including Elsevier SD Business Management and Accounting, EBSCOhost Business Source Complete, Taylor & Francis Social Science and Humanities Library, Gale Cengage Expanded Academic ASAP, Emerald Management Plus, Elsevier SD Psychology, EBSCOhost PsycARTICLES, EBSCOhost Academic Search Complete, and JSTOR. Physical and electronic libraries provided additional resources.

The strategy used for the literature review started with a general search for peer-reviewed articles using the keywords *resistance to change* followed by adding the keywords and phrases, *trust*, *frequency of change*, *history of change,* and *virtual faculty*. Each search uncovered additional keywords that led to appropriate articles. The search was originally limited to a 5-year window. As the search developed, some important works from earlier periods emerged. For my study, I gave careful consideration to the importance of an older study before including it in the literature review.

Table 3 shows the electronic database search words and phrases. The literature review focuses on determining how and where trust, frequency of change, and history of change play a significant role in successful organizational change implementation. These constructs and their key areas of influence form the main sections of Chapter 2.

Table 3

Database Search Terms and Phrases

Terms and Phrases	
Change	Readiness for change
Change experience	Organizational
Commitment	Readiness for change
Communication	Resistance to change
Credibility	Skepticism
Culture	Trust
Cynicism	Trustworthiness
Frequency of change	Virtual faculty
History of change	Workplace

Chapter 2 includes four major sections. An introduction section sets the stage for the chapter with a statement of the real world problem and the research problem. The section also includes a description of the major focus and strategy of the literature review. The theoretical foundation section includes the theories and models used as a conceptual framework for the study. The constructs used in the study make up the remaining sections, followed by a conclusion tying the constructs together and leading into Chapter 3. In the following sections the emphasis is placed on identifying the role of trust in leadership, frequency of change, and history of change as they relate to employee reaction to workplace change. Understanding these constructs and their antecedents can help the organization determine and influence the level of resistance, ambivalence, acceptance, or support for a planned change.

Theoretical Foundation

The theory of planned behavior and the theory of attribution provided the theoretical support for this study. In addition, the conceptual framework of the study draws on the transactional model of Lazarus and Folkman (1984).

Theory of Planned Behavior

The theory of planned behavior originated from Ajzen and Fishbein's (1980) theory of reasoned action, developed to deal with only simple behaviors (p. 5). Ajzen (1991) modified the model to include accounting for behaviors in specific contexts, which resulted in the theory of planned behavior (p. 181). The theory of planned behavior was developed by "adding perceived behavioral control to the original theory of reasoned action" (Fishbein & Ajzen, 2010, p. 282).

The theory of planned behavior provides a link between beliefs and behaviors used to predict behaviors in various areas of research including organizational behavior. Jimmieson, Peach, and White (2008) applied the theory to the organizational change context as an organizing framework to explain how employees' attitudes about change convert into behavioral actions; specifically to change communication and intentions to support change initiatives (p. 240). Ajzen (2005) concluded that dispositional concepts are indispensable tools for the behavioral scientist, and when appropriately employed they provide valuable information" (p. 145).

Theory of Attribution

Attribution theory is about the pursuit of *why* events happen. Weiner (1985), describing the constant pursuit of why events happen, asserted that wanting to know why something happened is clearly a normal function (p. 548). With cause determined,

effective management is possible, as well as planning for the future. If the event outcome is positive, then reinstatement of the prior causal network is likely. If the outcome is negative, then it is likely that the individual will try to alter the causes to produce a positive effect. Weiner suggested that, "adaption is not possible without causal analysis" (p. 549). Attributions are critical because they affect an individual's emotions and motivations.

Attributions are associated with a variety of emotions and may affect how an employee copes with change. Determining the cause(s) of why an outcome occurred allows individuals to better understand and predict their environment while contributing to effective coping (Weiner, 1986, p. 22). Managers can benefit from an awareness of how organizational change generates an array of emotions and coping mechanisms.

Transactional Stress Model

Rafferty and Griffin (2006) used Lazarus and Folkman's (1984) cognitive phenomenological model of stress and coping to propose ways that frequency, impact, and planning of change influenced people affected by change. The researchers hypothesized that both frequent change and significant organizational modification would have a positive relationship with psychological uncertainty; and a negative relationship to job satisfaction. In a comparison to other models, Lazarus and Folkman described their transactional model of stress thusly, "In contrast . . . the transactional model views the person and the environment in a dynamic, mutually reciprocal, bidirectional relationship" (p. 293).

Transformational change refers to the perceptions an individual has regarding the degree to which a change has altered an organization's core systems. The systems may

include the organization's structure, values, and strategy (Rafferty & Griffin, 2006, p. 1155). According to Lazarus and Folkman (1984), the novelty of an event is an aspect of an occurrence that makes it threatening or harmful for the individual (p. 83). Rafferty and Griffin (2006) described a novel event as one that an individual has not previously experienced. Transformational change would often be a novel event because people are experiencing something new that may require embracing new values (p. 1155).

Lazarus and Cohen-Charash (2001) explained that coping is how humans manage emotions. Organizations can influence emotions and the coping process through the organization's culture of values and practices (p. 57). Lazarus and Folkman's transactional model, and Lazarus and Cohen-Charash's work on emotion and coping in organizational life provide a useful framework for understanding and managing the consequences of the wide range of emotions experienced during organizational change.

Theoretical and Conceptual Framework Conclusion

The underlying logic for using the chosen theories and conceptual framework is their relationships to the research hypotheses for this study. The theory of planned behavior provides a link between beliefs and behaviors related to associations between communication and trust. Jimmieson et al. (2008) asserted that the theory of planned behavior supplies a framework with the ability to explain and predict behavioral responses resulting from employee beliefs about approaching change. Attribution theory provides a framework for how employees make sense of current and past change events, and how attribution determines emotions that can support change commitment or resistance to change. The transformational model provides an understanding of how

employees cope with significant change and how emotion and coping can influence resistance to change.

Literature Review

Resistance to Change

The dependent variable for my study was resistance to change. Resistance to change is a common part of the organizational change process (Foster, 2010, p. 3). Ford and Ford (2010) suggested that there is no agreed upon definition for resistance to change. Common descriptions include not buying in, pushback, foot dragging, or simply criticism (p. 4). Managers use these labels to describe behaviors that include making critical comments, not responding to inquiries, or not completing tasks in a timely manner. Resistance can describe behaviors ranging from body language to outright sabotage.

Seeing resistance to change in a different light, Ford, Ford, and D'Amelio (2008) argued that resistance can be seen as an opportunity for management to step back and review the drivers and steps set in place for change (p. 363). Foster (2010) found evidence to support the Ford et al. cross-sectional study on a non-traditional view of resistance to change. Ford and Ford (2010) also suggested that resistance can be a positive phenomenon; a form of valuable feedback that can aid in shaping how change is implemented (p. 3).

Change is a process involving movement from the known to the unknown. The unknown future contains uncertainties, which could possibly affect a person's worth, competencies, and abilities. As a result, people typically will not support change without cogent reasons. Change elicits a response from most people affected, either positively or

negatively. If the perception is positive the result will be an increase in commitment; a negative perception will provide an increase in resistance (Agboola & Salawu, 2011, p. 236).

Faculty Resistance to Change

Higher education institutions and their faculty are currently facing a multitude of challenges. Campuses across the country must respond to new technology, evolving student demographics, increased competition, and a rapid move toward globalization. In most cases, these institutions and staff are not prepared to handle such complex issues. In addition, traditional practices have come under fire for being inefficient, unresponsive, and too slow to change (p. 634).

Zell (2003) posited that successful implementation of change is challenging in any organization, but especially so in universities, where faculty rather than administrators control the core practices of the institution. Convincing professors to make changes in these core practices is challenging because most have invested extensive time and effort into their careers. They are often guided by well-established beliefs and values developed over years of training and indoctrination. Faculty are usually passionate about their work and often consider it a calling rather than a job (pp. 73-74). According to Grant (2003), in a higher education setting, change is resisted for reasons beyond the classic attitudes (e.g., fear of the unknown), and is more often faculty's sense that their professionalism is being challenged. (p. 72). Caruth and Caruth (2013) maintained that, to manage resistance effectively, higher education administrators must first understand the causes and nature of resistance to change (p. 12).

In an examination of faculty reaction to change, Zell (2003) conducted a quantitative study, interviewing 40 faculty members during a two year period of significant change. Interview questions were based on perceptions of department changes, and the impact of the change on the professor's core teaching processes, research, and the department in general. A key finding from the study indicated that the faculty experience of change was similar to the stages of death and dying, that is, denial, anger, bargaining, depression, and ultimately acceptance (p. 87).

Also exploring faculty reaction to change, Qian and Daniels (2008) investigated cynicism toward change in higher education institutions. The quantitative cross-sectional study took place at a large mid-western university undergoing significant change. A survey was administered to 949 tenure track faculty, with a total of 186 responses. A significant finding pertinent to my study was that trust in leadership is one of the antecedents of change-related cynicism. To gain faculty trust, the administration needs to look for more administrator-faculty interaction opportunities. In addition, administrators can benefit from a better understanding of the culture and change history of the university to help create a sense of community prior to implementing change (p. 329). McBride (2010) contended that, resistant faculty, unwilling to let go of tradition to make much needed changes can undermine the institution's efforts to grow and to meet new challenges. Such resistance can spring from distrust or cynicism after faculty has experienced a history of poorly managed change (p. 41).

According to Tagg (2012), making headway in improving colleges and universities requires understanding and addressing of the antecedents of faculty resistance (p. 6). Bok (2006), president emeritus of Harvard asserted that faculty have never called

out their leaders for moving too slowly on improving the existing methods of education, In fact, faculty are much more likely to resist any efforts designed to examine their work or ways of teaching (p. 334). Higher education administrators responsible for change must prepare for the challenges and recognize that change often brings resistance. They must also acknowledge rather than disregard or suppress faculty resistance to change (Devos, 2007; McBride, 2010).

The organizational change literature specific to faculty resistance to change is limited, with most being informative, while not providing evidence in the form of data. An exhaustive review resulted in finding no research specific to virtual faculty and resistance to change. Also, there was little or no research found concerning faculty and any relationships between resistance to change and the contextual factors of trust in leadership, frequency of change, and history of change. My study will help to fill the gap concerning virtual faculty, resistance to change in a virtual workforce, and how context affects faculty resistance to change. My study included three independent variables. The first variable is trust in the organization.

Organizational Trust

Many consider the construct of trust as a key factor for organizational success. Since the 1950s, trust is a recognized critical element of organizational effectiveness (Thomas, Zolin, & Hartman, 2009, p. 287). Public opinion surveys indicate low levels of trust in global organizations and their leadership (Rosenthal, 2012). A workforce cross-sectional study (Towers Watson, 2012) including over 13,000 employees representing large and mid-size organizations in 29 global markets revealed that only 40% of the workers had trust and confidence in their senior leadership. Ford and Ford (2010)

maintained that organizational trust is based on agreements, promises, and confidence. When these elements are broken, the result is mistrust leading to reluctance to support subsequent propositions for change (p. 9).

Shockley-Zalabak et al. (2010) suggested that trust is fundamental to creativity, risk taking, and for stimulating innovation. Trust in an organization is more than just important; trust is an essential element for organizational success (p. 1). Recent studies have provided evidence that trust is a key element for developing effective communication between all levels of employees in the workplace; for example, subordinates and supervisors, and unions and management (Thomas et al., 2009; Wulandari & Burgess, 2011).

Mayer, Davis, and Schoorman (1995) defined trust as the willingness of an individual to let themselves be vulnerable to the actions of another individual, assuming that the other will carry out an action important to the trustor, even if unable to monitor or control the other individual (p. 712). The basis of organizational trust is the employee's willingness to be susceptible or vulnerable to the policies and actions of the organization (Mayer et al., 1995, p. 712).

Trustworthiness is a concept closely associated with trust. Mayer et al. (1995) identified the perception of trustworthiness as an antecedent of trust. Using this model, trustworthiness is based on the perceptions of a trustee's characteristics that a trustor allows to influence the level of vulnerability toward the trustee (p. 717). Frazier et al. (2010) posited that trustworthiness is comprised of three components: ability, benevolence, and integrity. Ability reflects the perception of skills, expertise, and competency that qualify a trustee to function successfully within a particular

environment. Benevolence refers to the belief held by the trustor that the trustee cares about the trustor and has the trustor's best interest in mind. Integrity reflects the perception of the trustor that the trustee holds to an acceptable set of principles (p. 39).

It is commonly accepted that successful organizations view trust as an essential element of their culture. Effective organizational trust requires that trust flows in multiple directions. Mutual trust facilitates receptiveness to change and continuous learning (Chen & Chang, 2010, p. 691). Studies examining the outcome of trust are almost exclusively based on the subordinate's trust in leadership (Herold et al., 2008; Mahajan et al., 2012; Oreg & Sverdlik, 2011; Zeffane et al., 2011).

Supporting the concept that trust must be bi-directional, Brower, Lester, Korsgaard, and Dineen (2009) suggested that trust should be examined in manager-subordinate relationships from the perspective of each party (p. 328). In a hotel and resort industry cross-sectional study, Brower et al. found strong support for a positive correlation between manager's trust in subordinates and a subordinate's intentions and behavior (p. 343). A group of 172 employees from eight corporate locations provided the data for this study. Brower et al.'s findings are consistent with other organizational trust studies (Paille, Bourdeau, & Galois, 2010). The results from this study also supported a relationship between subordinate trust in leadership and subordinate Organizational Citizenship Behavior (OCB). Brower measured trust in managers using the Mayer and Davis (1999) scale. OCB was stronger when the manager's trust level for the subordinate is high. Highest levels of OCB occurred when the trust levels are high in both directions. Managers can benefit from this information by recognizing that if trust is lacking from either member of a dyad, the potential positive outcomes from the relationship may not

be maximized. Effective leaders will recognize the need to not only gain the trust of subordinates, but also learn to demonstrate trust in subordinates (Brower et al., 2009, p. 343).

Trust and resistance to change. Oreg and Sverdlik (2011) conducted a cross-sectional study on ambivalence toward organizational change and how trust in management can influence an employee's reaction toward change. The data collected came from 236 participants employed at an organization in the defense industry. Participants rated agreement or disagreement to questions based on dispositional resistance to change, trust in management, and ambivalence to change. Oreg and Sverdlik found that employees become more compliant when the change agent is perceived as trustworthy (p. 341). Brower et al. (2009) also found that a lack of trust in managers will make it difficult to meet change implementation goals (p. 343).

Oreg and Sverdlik (2011) contended that trust in management develops from identification with the organization. Based on this assertion, Oreg and Sverdlik suggested that orientation toward a change agent can be determined by assessing attitude toward the organization's leadership and toward the organization itself. Oreg and Sverdlik used dispositional resistance toward change to determine how an employee would react toward change, and trust in management to assess how an employee would react toward the change agent.

According to Oreg et al. (2008), individuals respond to change in different ways. Some embrace change, where others avoid or resist change. The dispositional resistance to change concept represents these individual differences (p. 936). To measure dispositional resistance to change, Oreg and Sverdlik (2011) used Oreg's (2003)

resistance to change scale. Oreg and Sverdlik (2008) indicated that validation of this scale included over 25 samples with a total of 4,201 participants from 19 countries (p. 937). Oreg and Sverdlik assessed trust in management, along with the perception of management's ability to successfully guide the organization through a change. Oreg and Sverdik (2011) conducted three studies in differing industry sectors, and found that in each of the studies the orientation toward the change agent influenced the correlation between employee ambivalence and dispositional resistance with positive outcomes only seen when employees had a positive orientation concerning the change agent.

Oreg and Sverdlik (2011) contended that managers will benefit from an awareness of the differential impact caused by creating trust on employees with differing dispositional orientation toward planned change. Engendering trust may suffice when gaining support for change from those employees who understand or like change; however, those employees holding a negative view of change will likely be ambivalent. Oreg and Sverdlik suggested that managers can identify those employees and help them work through their concerns (p. 346).

Oreg (2006) examined the relationships of trust in management and resistance to change, measuring trust based on employees' perceived confidence in management's ability to effectively lead change, and on management's commitment to act in the best interest of the organization and the employees. The data collected for the cross-sectional study came from 177 employees experiencing a merger of two companies in the defense industry. Oreg discovered that when there is a lack of trust in management, resistance is elevated in multiple areas including affective, behavioral, and cognitive. Highest levels of resistance are seen in the participant's cognitive analysis of the change. Change outcomes

that affected job security, power, prestige, and intrinsic rewards are associated with the cognitive and affective components of resistance. A literature review of resistance to change revealed similar results (Erwin & Garman, 2010) where affective, behavioral, and cognitive dimensions of resistance are influenced by threats and benefits of change (p. 43).

In the same study, Oreg (2006) proposed and tested a model of resistance to organizational change to better understand the antecedents and consequences of resistance. Oreg examined the elements of employee disposition, and how to control for the impact of perceived threats to employees' power, job security, and intrinsic motivation. In this study, Oreg also explored the way change is implemented and how contextual factors influence an individual's attitude about change. Oreg accomplished this through consideration of how employees' trust in management; volume of change-related information; and level of change opposition in employees' social environment are associated with behavioral resistance to change. Oreg found that change outcomes such as job security, power, and prestige are not significantly associated with behavioral resistance. However, process factors such as trust in leadership and change-related social influence are associated with behavioral resistance. Trust in management indicated significant effects on all three components of resistance: affective, cognitive, and behavioral.

Trust and commitment to organizational change. Research results suggest that the constructs of trust and communication have a relationship with organizational commitment (Cho & Park, 2011; Herold et al., 2008; Mahajan et al., 2012; Michaelis et al., 2009; Zeffane et al., 2011). Researchers of organizational commitment and its

relationship to resistance to change have typically looked at organizational commitment as a result of employee response to change. Peccei, Giangreco, and Sebastiano (2011) explored the role of commitment as an antecedent of resistance. Peccei et al. found that organizational commitment is an important predictor of resistance to change with both direct and indirect influence through its positive impact on employee attitudes on change.

Likewise, Cho and Park (2011) examined the relationship between organizational trust, satisfaction and commitment in a cross-sectional study of 22,800 Federal Aviation Administration (FAA) employees. The researchers used direct statements from an employee attitude scale based on the level of trust in direct supervisors, coworkers, and FAA management. Cho and Park's findings support the general consensus that trust is a relevant resource that should be managed and cultivated in organizations. Cho & Park found that institutional trust had the most significant effect on commitment. Trust in supervisors played a significant role in an employee's attitude and satisfaction, but showed a weak influence on commitment. Cho and Park attribute this to the perception that supervisors are separate rather than representative of the organization, and a perception that supervisors do not have enough influence to make changes in a large organization (p. 565).

In a study designed to examine the relationship between trust and commitment, Mahajan et al. (2012) argued that communication from top management and employee involvement result in benefits likely seen as positive by members of the organization. Employees perceive benefit from receiving information about where the organization is headed, and in how they may be included in determining policy matters. Mahajan et al. conducted a cross-sectional study of a large trucking company, collecting data from 484

drivers. Using existing scales measuring job-related attitudes, the researchers found evidence that leadership communication and member involvement have an indirect correlation to employee commitment through their relationship with trust in the organization's leaders (p. 175).

Consistent with social exchange theory, the Mahajan et al. (2012) study revealed that even though an organization may expect commitment as a result of top management communication (Husain, 2013), it also becomes more vulnerable to the actions of employees. In doing so, an environment develops where employees are more prone to trusting the organization's leaders. Mahajan et al. (2012) found results suggesting that trust in top managers is a valid predictor of commitment to the organization. Mahajan et al. also noted that this attachment to the organization develops to some extent as a result of the employee's confidence in the actions of the organization's leadership.

Zeffane et al. (2011) also conducted a cross-sectional study examining relationships between communication, trust, and workplace commitment. A group of 244 employees in the food processing industry provided the survey data. The researchers explored the influence of communication effectiveness and job satisfaction on workplace climate of trust and trust in managers. Zeffane et al. found that employee perception of effective communication between management and employees, and employee pride and commitment in working for the organization are the most significant elements influencing the degree of trust in management. Perceptions of effective communication with top management shape the organization's trust climate. The results of the Zeffane et al. study are consistent with more recent works (Husain, 2013; Tucker et al., 2013) and

reinforces the importance of effective communication in general, and with top management for nurturing trust in organizations.

Zeffane et al. (2011) posited that their research clearly indicates a positive relationship between the variables of communication, commitment, and trust, with the tie between communication and trust being the strongest. The relationship between trust and commitment is also significant. Zeffane et al. also argued that their findings lead to the logical assumption that trust is central to the triad of trust, communication, and commitment and that commitment is the outcome of the relationship. It is through trust that loyalty and commitment are established; however, trust is dependent on several variables, including effective communication (p. 82).

Adding a leadership personal quality, Michaelis et al. (2009) explored the relationship between the leadership traits of *charisma* and trust, and the employees' affective commitment to change and innovation implementation behavior. The data collected for the cross-sectional study came from a survey of 194 Research & Development workers at a multinational automotive company where a technology change had recently taken place. Study participants included front-line, lower, and middle management employees. Michaelis et al. found that both charismatic leadership and employees' trust in leadership are positively related to innovation implementation behavior, and that psychological processes of trust in top managers and charismatic leadership are associated with innovation implementation behavior. Michaelis et al. found that by simultaneously examining both traits in one model, it was possible to determine that trust in top management had a more significant impact on affective commitment to change than did charismatic leadership.

In another example of the relationship between trust and commitment, Herold et al. (2008) conducted a cross-sectional study on the effects of transformational leadership during times of change and its effect on commitment to change. The data collected for this study came from 343 participants in 30 organizations which included diverse industries such as information technology, banking, and engineering. Each organization started implementing a planned change, or had recently completed a change initiative. Herold et al. found transformational leadership positively related to the employee's commitment to a change due to the transformational leader's ability to get buy-in to change based on trust that has accumulated over time and multiple planned changes.

Trust and member support for organizational change. Armenakis et al. (2007) identified five precursors to determine the level of buy-in in an organization experiencing change. The precursors are labeled *change recipient beliefs* and include (a) discrepancy: belief that a need for change exists, (b) appropriateness: belief that the proposed change addresses the cause of the discrepancy, (c) efficacy: belief that the recipients of the change are capable of carrying out new behaviors required by the proposed change, (d) principle support: belief that support will be present from change agents, and (e) valence: belief that the outcome of a proposed change will bring about the intrinsic and/or extrinsic rewards promised (p. 485). Collectively, the five beliefs offer a framework for assessing a change initiative. Each belief provides valuable information concerning deficiencies that could have an impact on the success of a change initiative (p. 499).

Trust and engagement in organizational change. In a cross-sectional study of 20 large companies, Lin (2010) collected data from 429 industrial workers finding supporting evidence that organizational trust is positively associated with work

engagement. Likewise, Chughati & Buckley (2008) found that organizational trust is also a significant predictor of an employee's level of work engagement. Work engagement reflects the employee's enthusiasm and involvement with their job (p. 62). Subsequently, organizational trust has a positive effect on work engagement which includes vigor, dedication, and absorption. Organizational trust indicates the presence of core values that aid in motivating employees to be energetic and creative (Lin, 2010). Trust is also the impetus by which individuals become engaged or absorbed in organizational change, which brings about continual improvement (p. 521).

Trust and organizational competence to bring about change. Shockley-Zalabak et al. (2010) argued that being competent is essential, and that ensuring that employees trust in that competence is equally important. Competence shapes the overall effectiveness of the organization, and relates to the quality of its products and services (p. 62). Shockley-Zalabak et al. defined competence as the capability of the organization through its leadership, strategy, and decisions to meet the challenges presented in its environment (p. 29). Indeed, fear of change increases when the change agent's competency is in question (pp. 58-59).

Stakeholders are more likely to resent change when they do not trust the leader's ability to effectively make the change. Low trust levels can contribute to emotional resistance, sabotage, or problem avoidance. According to Shockley-Zalabak et al. (2010), both active and passive resistance to change increase when distrust is at high levels. Examples of resistance include efforts to slow or stop a planned change, such as: organizing protests, open disagreement, slowed responses to requests, or sabotage. Shockley-Zalabak et al. also argued that passive resistance may emerge in the form of

ignoring important change messages, or appearing to go along, but not making the change (p. 89).

In another example examining the importance of competence, Sloyan and Ludema (2010) conducted an 18-month longitudinal comparative case study to examine how trust influences an employee's response to organizational change. Their findings revealed several major points. Most importantly, as employees evaluate and make sense of a change initiative, they accomplish this through four related types of trust: trust in the organization, leadership, process, and outcomes. How intent of the change is perceived and the perception of the organization's competence to implement effectively influence organizational trust. The perception of business unit and corporate support, and the level of resources allocated to the individual projects influence leadership trust. The perception of fair and adequate representation and procedural justice influence process trust. Historical success with similar changes and the expected impact the change would have on the employees, business units, and the overall organization influence outcome trust.

Sloyan and Ludema (2010) concluded that levels of trust are associated with individual as well as organizational identity. Individuals evaluate a change initiative considering the potential impact on their security, authority, autonomy, workload, and success. Sloyan and Ludema also found that trust levels evolve over the course of a planned change as employees make sense of interactions, observations and events. Their responses to change are dynamic and oscillated along a continuum (p. 247). An opportunity exists for more research on how a change agent can use this information before, during, and after a change initiative.

Trust and organizational support for change. In a cross-sectional study, Ristig (2009) surveyed 105 supervisor and subordinate employees at a southern United States firearms distributor to evaluate the relationship between trust and perceived organizational support. The results indicated a positive relationship between perceived organizational support and trust. Managers can benefit by understanding that employees who perceive that they are valued and treated well will reciprocate through behaviors that support organizational goals.

Likewise, in a cross-sectional social exchange study, Paillé et al. (2010) surveyed 355 white-collar employees working in a variety of industries to determine if connections existed between perceived organizational support, Organizational Citizenship Behavior (OCB), job satisfaction, trust, and intention to leave. Paillé et al. found that perceived organizational support is positively related to trust, satisfaction, and OCB.

Shockley-Zalabak et al. (2010) argued that building and maintaining trust is a major leadership responsibility and an area of increasing importance for communication professionals. Trust is rooted in an organization's culture and is associated with the organization's values, norms, and beliefs. Communication forms the basis for trust, as it influences and determines the outcomes of communication behaviors (p. 14).

Trust, communication, and resistance to change. In a cross-sectional study of university faculty, Qian and Daniels (2008) examined the role of communication processes in creating cynicism (p. 322). Cynicism and resistance to change share the characteristic of negative attitudes concerning change resulting from organizational communication practices. However, while related, organizational cynicism and resistance to change are distinct concepts. Resistance to change implies actively opposing a change,

where cynicism is seen as a passive response to change (Qian & Daniels, 2008, p. 322). Qian and Daniels' considered both relational and informational aspects. The relational aspect includes cynicism of coworkers toward the change and trust in leadership. The informational aspect includes the perceived quality of information. Qian and Daniels argued that these two variables are the antecedents of cynicism and that resistance to change is a consequence of cynicism. The data collected for this study came from a large mid-western university undertaking a change which involved moving to a performance based budget. A total of 186 full-time faculty members participated in the study. The evidence indicated that both communication and workplace relationships have a significant causal effect on cynicism related to change. The results also show that intention to resist organizational change is a direct outcome of change-related cynicism. Qian and Daniels suggested that the quantitative data gathered in this study failed to indicate the content of employee cynicism. Future research could collect qualitative data that might indicate how cynicism spreads in an organization through daily conversations (p. 323).

Furst and Cable (2008) examined how employee-supervision relationships and tactics for influencing (e.g., communication) relate to employee resistance to organizational change. In a cross-sectional study, data collection came from two companies: a leading producer of industrial and automotive products, and a rapidly expanding financial services organization. Furst and Cable (p. 454) used Leader-Member Exchange (LMX) and attribution theories to develop four hypotheses based on the effects of management influence tactics on resistance to change and how LMX moderates the relationships. Managerial tactics divide into two categories. Hard tactics are those that

used sanctions (punishments) or legitimization (stressing that changes are consistent with policy or precedent). Soft tactics are those that used ingratiation (praise for effort) or consultation (employee involvement in change). The evidence indicated that ingratiation tactics relate to lower levels of resistance to change when employees had high levels of LMX. When employees experienced low levels of LMX, ingratiating tactics are associated with high levels of resistance to change. Similarly, LMX had an influence on the link between resistance to change and the tactics of legitimization and sanctions. Furst and Cable (p. 548) argued that the moderating role of LMX supports the use of attribution theory when examining managerial influence. The findings suggested that when employees experience a positive relationship with their supervisor, they are likely to consider the use of legitimation and sanctions as situational and are less likely to resist change.

Furst and Cable (2008) posited that managers should evaluate their relationships with employees affected by a change initiative. Tactics such as ingratiation will likely be effective where high LMX exists, but have the opposite effect in low LMX contexts. The same may hold true for legitimization and sanction tactics. Coercion without trust in management is likely to increase resistance to change (p. 459). The evidence from the study is based on past events; therefore, the employees relied on recall rather than current impressions. A study conducted using a current change initiative could be valuable for confirming the findings.

In another study highlighting the importance of communication, Ertürk (2008) examined the role of trust, participation, and trust on openness to organizational change in public-sector organizations. Five large service organizations undergoing significant

change participated in the cross-sectional study. Of 2,500 randomly sampled employees, 878 completed a questionnaire. The survey provided data used to explore the combined effects of employee participation, manager communication, and trust on employee openness to change. The focus of the study is to examine the role of trust in supervision as a possible mediating influence on the relationship between participation, communication, and the employee's openness to workplace change. Supporting the evidence from other studies (Husain, 2013; Mahajan et al., 2012; Qian & Daniels, 2008), Ertürk (2008) found that both employee participation and management communication are significantly and positively related to trust in the employee's supervisor. Ertürk also found that trust in supervisor had a positive influence on the employee's willingness to accept change. The findings also revealed that when trust in supervisor is included as an antecedent of openness to change, the effects of management communication on acceptance of change decreased to an insignificant level (p. 476).

As other researchers (Armenakis et al., 2007; Ristig, 2009) have discovered, Ertürk (2008) argued that this study provided evidence that an employee's trust in their supervisor has a dominant influence on openness to workplace change. Creating an atmosphere of trust between managers and employees could provide impetus during a planned change, thereby reducing employee resistance to change. Ertürk posited that organizations wishing to build trust from their employees should focus on implementing human resource practices that encourage open and honest communication (p. 477). Future research could involve replicating this study in other industries and other countries where the organizational or national cultures may yield different results.

Trust, communication, and involvement with organizational change. Thomas et al. (2009) examined quality versus quantity of communication as an influencer of employee trust toward fellow workers, supervisors, and organizational leadership. The cross-sectional study revealed that information quality is more important when communicating with supervisors and coworkers; however, quantity of information is more important in top management communication. The researchers found that quality or quantity of information has an effect on trust, which in turn creates a perception of openness and thus increased employee involvement (p. 302). Timely, useful, and accurate information led to increased trust among coworkers and supervisors (p. 303). Furthermore, Berneth et al. (2007) found that employees are more willing to support and commit to change when leaders are open and honest with their communication on the planned change (p. 321).

When evaluating information from the organization's leaders, Thomas et al. (2009) found evidence that suggests that one should determine if enough information is flowing down from top management. Trust in the organization's leadership is less dyadic and more impersonal. Employees base their trust in top management less on observation and more on the outcome of decisions made by organizational leaders. Top management trust relies on perceptions of larger organization systems, e.g., human resource practices, professional development opportunities, and job security. Specific characteristics or behaviors of the organization's leaders are less likely to be a factor in the employee's trust in these individuals (pp. 303-305).

In an examination of employee buy-in to organizational change, Tucker et al. (2013) conducted a field study exploring the relationship between three types of social

accounts (causal, ideological, and referential) and trust during a significant organizational change. Tucker et al. argued that the success or failure of planned change is dependent on how effectively managers employ social accounts (p. 185). The study includes data from two organizations that had recently experienced planned change. The organizations are evaluated based on their communications and trust levels.

Tucker et al. (2013) suggested that when managers and subordinates are in sync it adds coherence and direction to the task at hand (p. 191). Their study focused on social accounts and the potential impact on trust. Tucker et al. argued that the employee's reaction to organizational change may be influenced by the causal accounts used by managers. Causal accounts are a type of social account that identify the internal and external forces that impact the organization and indicate a need for change (p. 188). Study evidence indicated that causal and ideological accounts are significant predictors for successful social accounts. Ideological accounts are also significant predictors of trust in top management. Tucker et al. explained that ideological accounts acknowledge the values of change, and the underlying reasons why managers implement change (p. 188). Managers use ideological accounts to explain the current change, by emphasizing how it relates to the organization's goals and objectives. Tucker et al. also suggested that causal accounts have their place in organizational communication, but ideological accounts provide the strongest benefit during the planned change process (p. 204).

Wulandari and Burgess (2011) conducted a cross-sectional study exploring the link between trust, communication openness, and job satisfaction. The data collected for this study came from 250 full-time employees in the energy industry. The unionized organization had experienced multiple labor disputes in it past. The study results showed

a positive relationship between supervisor openness and employee job satisfaction. Wulandari and Burgess concluded that the constructs of trust, openness, and job satisfaction to be positively correlated and interrelated (p. 68). In this study, trust is strongly associated with both communication openness and job satisfaction. In an array of previous research, investigators found that open and honest communication leads to trust, which is associated with a variety of antecedents of organizational change (Brower et al., 2009; Cho & Park, 2011).

Frequency of Organizational Change

Herold, Fedor, and Caldwell (2007) argued that the environmental context is an important consideration for understanding the organization's actions. By context, Herold et al. are referring to the dynamicism, volatility, or turbulence of change in the organization (p. 944). The context of turbulence describes the "preponderance" of change taking place simultaneously in an organization. The overlapping of change can create distractions from what is perhaps the primary change, which can be frustrating for individuals. Changes typically take place in an environment of finite resources and support, thus furthering the frustrations (Herold et al., 2007, p. 944).

Herold et al. (2007) examined how commitment to change influences contextual factors. The data collected for the cross-sectional study came from 553 individuals employed by 25 organizations representing multiple industries. Study results indicated that when an organization experiences pervasive change the commitment from individuals is negatively affected. Herold et al. suggested that the study evidence may be useful when determining content for change management training in organizations with turbulent environments. The researchers concluded that severity and frequency of

changes have a cumulative effect on the employees and organization (p. 944). Herold et al. argued that there is a need for greater understanding of the processes an organization uses for introducing and implementing change. Organization leaders must become more aware of the complexities of change efforts and plan beyond the *what* and *how* of change. They must also embrace issues related to change content and context (p. 950).

In another study including frequency of change, Boyne and Meier (2009) described three contextual elements of environmental change: frequency, amplitude, and turbulence. Frequency is how often change occurs, ranging from a static condition to one of high recurrence. Amplitude refers to the significance of the changes taking place. Boyne and Meier asserted that in themselves, these two elements of change do not necessarily have a strong impact on the organization; in some organizations frequency and amplitude can be managed if changes are cyclical or known far enough in advance. The third element, turbulence, or unpredictability of change can create adverse consequences on the organization's performance. Boyne and Meier argued that the magnitude of unpredictable change is directly related to the negative impact on organizational results (pp. 802-803).

Boyne and Meier (2009) examined the impact of environmental turbulence on the public sector using eight years of performance data from approximately 1,000 Texas school districts. To determine the level of turbulence, Boyne and Meier created and combined five industry specific indicators into a single index. Study results indicated that when organizations operate in a turbulent environment, performance will suffer. Armed with this knowledge managers should take steps to minimize the impact. An organization

cannot drop out of its turbulent environment, but there may be measures available to dampen the volatility (p. 820).

Drawing on Lazarus and Folkman's (1984) transactional model, Rafferty and Griffin (2006) identified frequency, or how often change occurs as an important characteristic of change. Frequent change may cause individuals to be fatigued and to experience anxiety related to the unpredictability of change (pp. 1154-1155). In perhaps one of the most rigorous explorations on change frequency, Rafferty and Griffin (2006) used a repeated cross-sectional design to examine individuals' perceptions of change related to frequency, impact, and planning of change. Participants responded to an organizational change survey prior to participating in an employee attitude survey in two consecutive years. The first organizational change sample included 599 participants, and the second included 700 participants. The employee attitude survey had 3,245 surveys returned for the first sample, and 2,864 surveys returned in the second sample. Study results indicated that frequency of change is positively associated with employee turnover and negatively associated with job satisfaction, via uncertainty. In contrast, transformational change is not significantly related to uncertainty, but did display a direct positive association with intention to turnover (p. 1159).

Lattuch and Young (2011) found results similar to Rafferty and Griffin (2006) in a cross-sectional study examining perceptions of organizational change in young professionals (ages 25-31). The data collected for this study came from 261 young professionals working in a variety of organizations and settings. Lattuch and Young found a significant relationship between frequency of change and psychological uncertainty, and that uncertainty is significantly associated with behavioral stress and job

satisfaction (pp. 617-618). Unlike Rafferty and Griffin, Lattuch and Young found that magnitude of change is not significantly associated with uncertainty. Study results indicated that young professionals are satisfied with their jobs in situations where the magnitude of change is high. The results also showed a significant positive relationship between frequency of change and job satisfaction.

Lattuch and Young (2011) recommended further research using repeated cross-sectional designs before, during, and after a change event. The researchers also suggested that managers working with young professionals will benefit from an understanding of which features of change create a negative perception. Lattuch and Young recommended that involving key young employees in the change process as agents and promoters can aid in supporting change efforts (pp. 619-621).

Adding another dimension to the role of frequency of change, Smollan et al. (2010) conducted a qualitative study investigating the role of time associated with the emotions individuals experience during organizational change. The study included interviews conducted with 24 individuals representing a wide range of experience with change. The interviews explored the cognitive, affective, and behavioral issues associated with organizational change. In particular, questions addressed issues of temporal speed, timing, and frequency of change. Participating managers answered questions about the emotions they observed in their staff during organizational change (p. 36).

Smollan et al. (2010) found that change is too quick when those affected perceived they had too little time to accomplish the required work, or to psychologically adjust to the change. In some cases managers felt that the pace is too slow when others had difficulty grasping the "big picture" of the change, or when the implementation is

taking longer than expected (p. 38). Frequency of change concerned many participants, with complaints of diminished feelings of job security; pressures from managing multiple simultaneous change initiatives; and juggling priorities when instantly switching from one change to the next. An important study outcome is that experience and emotions from past changes carry over into the present time (p. 41). Smollan et al. asserted that past traumatic change events can have an influence on present and future change events (p. 41).

There is evidence that frequent change can have a positive influence on organizational change efforts. Stensaker and Meyer (2012) examined how an individual's experience with organizational change influences the reaction to change. The researchers explored whether repeated exposure to change develops change capabilities, or whether repeated exposure to change produces negative outcomes. The data collected for this qualitative study came from 50 interviews at 10 companies. Participants answered questions about their reactions to change, and about different methods of change management. Stensaker and Meyer found that employees with limited change experience showed strong emotional reactions, whereas employees with high levels of change experience are less likely to exhibit frustration by the uncertainty of change (p. 113). Study data indicated that individuals who had experienced previous changes appeared more supportive and more likely to contribute to successful change implementation. Employees appeared to be more receptive to change as experience with organizational change increased. Experience caused employees to become accustomed to change and this familiarity influenced the individual reaction to change (p. 114). Experience was also positively associated with understanding the need for change. Individuals who have

experienced a series of changes become accustomed to change and the implementation process. Stensaker and Meyer cautioned that while experience is associated with acceptance of change it does not mean enthusiastic acceptance; they may have learned that acceptance may be the least conspicuous way to respond to change (p. 121).

History of Organizational Change

The organizational change literature includes many references to the high failure rate of change initiatives, which has led to multiple studies at the organizational or system level. Researchers looking for a more micro-level perspective are examining the individuals working within the organizations and the psychological considerations that influence change initiatives (Devos et al., 2007, p. 608). An organization's history of change management offers a possible explanation as to why employees may be resistant or open to change. Becker (2010) asserted that, "A poor history or positive history of change is linked to individuals' feelings and expectations" (p. 264). Ford and Ford (2009) maintained that as changes are proposed, employees remember prior experiences, and expecting that history will repeat itself they often resist (p. 99).

In an integrative study, Walker et al. (2007) examined the influence of content, context, and process. In addition, the researchers investigated the role of personality and dispositional characteristics that can potentially influence the outcome of a change initiative. Walker et al. conducted the study at a leading US manufacturing company where a spin-off of a subsidiary took place. The data collected for this study came from 117 production workers in the newly created organization. The researchers used the term *cynicism* as a surrogate for contextual factors. Walker et al. hypothesized that employees who are cynical about change would resist efforts to implement organizational change.

Results from the study indicated a negative relationship between cynicism and change beliefs, and that change beliefs are a mediator between cynicism and commitment. Study findings also suggested that process can potentially counteract employee cynicism. Commitment to change may increase when employees have been properly prepared. Walker et al. emphasized the advantages of a carefully planned change initiative that includes awareness of prior change implementations in the organization (p. 769).

Also considering the employee's past experience with organizational change, Becker (2010) explored *unlearning* during implementation of change; in particular, prior knowledge and existing mental models which might influence change efforts. The focus of the study emphasized individual level influences, but also took into consideration the impact of context on organizational change. The cross-sectional study included data collected from 189 staff members who had experienced a leadership role in the implementation of a new information system completed a survey. Becker found that history of change can constrain future organizational change. In organizations with a history of failed initiatives, employees may be less likely to accept change based on history and collective memories. Becker recommended the acknowledgement of previous failed change, and that in some cases, not changing is better than changes made without proper planning and careful consideration (p. 264).

Finding similar results in a cross-sectional organizational restructuring study, Bordia et al. (2007) examined the influence of history of change on employee attitudes and turnover. Bordia et al. argued that a history of poor change management will lead to low expectations concerning the success of future change initiatives and the ability of managers to implement successful change. The data collected for this study came from

124 staff members at a university undergoing merging and integration of academic units, resulting in reduction of staff and relocation. Data collection took place at two points in time; first at three months into the initial phase of the change, and then again two years after the initial survey. Evidence from the study indicated that poor change management history leads to cynicism about organizational change; thus pessimism about the success of future change implementations and the ability of managers to bring about successful change. Cynicism also led to lack of openness about change initiatives, and was associated with employee turnover. Bordea et al. asserted a possible downward spiral can be created by poor change management history; one where cynicism results in a lack of openness to change, leading to low participation in change efforts, thus jeopardizing the success of change implementations (p. 6).

Devos et al. (2007) conducted two cross-sectional studies that included an examination of the potential influence of context on employee openness to change. In the first study the researchers explored the influence of content, context, and process on openness to change. The contextual factors in the study are trust in executive management and trust in direct supervisor. Devos et al. (p. 612) hypothesized that trust in these two levels of management would be associated with higher levels of openness to change. Data collection took place using a work-related, general interest website where people received invitations to participate if they had experienced organizational change. The first study had 828 participants who responded to the online survey. Most of the respondents described themselves as professionals (42%) or management (36%). The researchers used an experimental simulation strategy. Participants were randomly assigned an organizational change scenario that included conditions of content, context,

and process. The experimental design included use of a covariate of locus of control. Study results indicated that trust in executive management and trust in direct supervisor are positively associated with openness to change. There were no statistically significant interaction effects, which led the researchers to conclude that content, context, and process variables acted independently to create a positive attitude toward organizational change (pp. 612-613).

In contrast, Devos et al. (2007) found different results in the second study, exploring the relationship between trust in executive management, history of change, and openness to change. As in the first study, the researcher used an online survey to collect data from 835 professionals. The researchers hypothesize that higher levels of successful history of change and trust in executive management would be associated with greater openness to change. Similar to the first study, the participants answered questions based on an organizational change scenario. Again, locus of control is a covariate. Study evidence indicated significant effects for history of change and trust in management, and a significant interaction between history of change and trust in management. When there is an indication of low trust, differences in history of change indicated significant differences in openness to change. This study has limitations; in particular the use of scenarios where the participants are provided artificial responses, not based on actual events, experiences, and emotions. A similar study in an actual organizational change situation could provide an opportunity for further research and potential support for the findings from these studies.

Summary and Conclusions

Shockley-Zalabak et al. (2010) explained that planned change is much more effective in a high trust environment. Whether it is behavioral, technological, or structural, change is effective only when based on having trust in the decision-makers (p. 189). A key point found in reviewing the literature is that employees may become preoccupied with self-preservation rather than activities that produce value when trust between manager and subordinate does not exist. According to Mayer and Gavin (2012), when trust between employee and manager exists the subordinate is much more likely to engage in value-added and supporting activities. The high-trust organization will be more likely to have workers who embrace rather than resist change (p. 884).

In addition, most managers and leaders recognize that trust is an essential component of the successful organization. Zeffane et al. (2011) posited that managers should recognize that trust is not something that just happens; it is molded and maintained through effective communications and nurturing by both employees and managers. Trust in change leadership is a critical component of the change process (p. 82). The review of literature also revealed that when faced with internal and external pressures to change, managers and administrators often overlook the importance of considering how frequent change is taking place in the organization. Herold et al. (2007) concluded that the severity and frequency of change can have a cumulative effect on the employees and the organization (p. 944). Drawing on Lazarus and Folkman's (1984) transactional model, Rafferty and Griffin (2006) explained that frequency is an important characteristic of change. Frequent change may cause individuals to be fatigued and to experience anxiety related to the unpredictability of change (pp. 1154-1155).

Today's higher education institutions and faculty currently face a multitude of challenges.). Zell (2003) posited that successful implementation of change is challenging in any organization, but especially so in universities and colleges, where faculty rather than administrators control the core practices of the institution. Convincing professors to make changes in their core practices is challenging because most have invested extensive time and effort into their careers (pp. 73-74). According to Grant (2003), in a higher education setting, change is resisted for reasons beyond the common attitudes (e.g., fear of the unknown), and is more often faculty's sense that their professionalism is being challenged. (p. 72). Understanding this, higher education administrators must prepare for the challenges and recognize that change often brings resistance. They must also acknowledge rather than disregard or suppress faculty resistance to change (Devos, 2007; McBride, 2010).

Very little research has been conducted on implementing change in colleges and universities, and the review of literature yielded none specific to online faculty experiences. My research was unique, as it focused only on virtual faculty perceptions of change in the workplace, and breaks new ground as it addresses how contextual factors affect faculty resistance to change in higher education. My study was designed to extend knowledge in the discipline by shedding light on these important considerations for implementing organizational change. Chapter 3 includes an explanation of the research design and methodology used to answer the research questions and test the associated hypotheses.

Chapter 3: Research Method

The purpose of this quantitative study was to gain insight into how contextual factors impact one of the most commonly believed causes for organizational change failure: resistance to change. Specifically, the focus of the study was to explore the influence of the independent variables of trust in leadership, frequency of change, and history of change on the dependent variable, resistance to change, within a virtual workforce.

The organizational change literature includes many explanations or reasons for why people resist change. For this study, I chose the theme of contextual issues based on the finding that there is a need for managers to be conscious of the context in which change is taking place (Herold et al., 2007, p. 951). Considering the internal context of a change provides an opportunity to influence the outcome of current and future change initiatives.

The change literature includes many internal contextual explanations for resistance to change, for example: cynicism, trust, organizational demographics, culture, history of change, perceived support, leader-member exchange, frequency of change, and managerial tension. The Chapter 2 literature review and the environment in the case study university helped in determining my selection of trust in leadership, frequency of change, and history of change as key contextual influencers of resistance to change. I chose trust in leadership because of the relationship it often shares with successful organizational change (Erwin & Garman, 2010). The study organization has experienced a steady flow of changes that often overlap. Research has shown that the frequency of change is a key indicator of resistance to change (Boyne & Meier, 2009, p. 806; Lattuch & Young, 2010,

pp. 617-618; Rafferty & Griffin, 2006, p. 1159). Finally, history of change was chosen because it encompasses both trust and frequency along with the success or failure of past changes. History of change research indicates that it too, is an important influencer of resistance to change (Bordia et al., 2007, pp. 5-6; Devos et al, 2007, p. 624; Walker et al., 2007, pp.769-770).

I examined these contextual factors to determine how the independent variables of trust in leadership, frequency of change, and history of change might shape the dependent variable of employee resistance to change when working in a virtual environment. My study took place at one university where over 90% of the faculty teach exclusively online rather than in a face-to-face environment. With a focus on one university, I had greater control over the amount of change, type of change, and similarity of the change experienced by the participants. The study institution has experienced significant change, making it an excellent example for a study of this nature.

This chapter includes a detailed description of the research design and methodology. The methodology section contains the population characteristics; sample size; sampling procedures; instrumentation and operationalization of constructs; instrumentation for the study; and data analysis plan. The chapter concludes with an explanation on threats to internal and external validity and ethical procedures.

Research Design and Rationale

The research design for this study was a non-experimental design employing a cross-sectional survey methodology. The design included four survey instruments combined to form a single Internet-based survey. Cross-sectional survey was the chosen design, due to its efficient and rapid way to examine the perceptions of a large group of

employees. In addition, I was not concerned with controlling for the differences between multiple groups, or attempting to simulate an experiment. According to Frankfort-Nachmias and Nachmias (2012, p. 116), cross-sectional studies are the most commonly employed designs identified with survey research.

Babbie (2004, p. 243) asserted that surveys are most likely the best method available to social researchers seeking to collect original data for examining a population much too large to observe in its entirety. Surveys are also desirable tools for measuring orientations and attitudes in large populations. Survey research is the chosen method for data collection because it enables researchers to reach significant conclusions when investigating a collection of research questions. The considerations of time and expense constraints often make surveys the data collection method of choice (Singleton & Straits, 2005, p. 226).

Methodology

Population

For this study, the participants work remotely, or virtually, from off-campus locations. The size of the target population is 382 full-time faculty and 2,143 adjunct faculty. These virtual workers are online faculty working in higher education for a large university with a large online presence since 2001. Similar to most organizations, the faculty at a university or college work within a time-forged culture, with processes and traditions firmly established. Several published works describe the culture entrenched within higher education institutions (Caruth & Caruth, 2013; Craig, 2004). According to Craig (2004):

> Higher education in the United States is built on a long history of strong traditions that have, in many ways, been impervious to outside pressure or influences. Often higher education institutions have served as change agents for society but they, themselves, have functioned with a great deal of autonomy and now find such autonomy challenged. (p. 79)

Within a university, faculty are often reluctant to accept change that threatens established traditions (Qian & Daniels, 2008; Tagg, 2012). Offering a college education through online courses is a good example of change in higher education that has met with resistance from both institutions and faculty (Mitchell, Parlamis, & Claiborne, 2014). This modality is perhaps one of the most significant disruptive forces to emerge in education in recent times, and now virtual faculty exist as a direct result of this change.

Though there is research (Mitchell, Parlamis, & Claiborne, 2014; Qian & Daniels, 2008) on faculty in traditional higher education resisting change, we know significantly less about resistance to change from faculty working in a virtual environment. My major reason for conducting this study was to determine if virtual faculty can be characterized similarly to faculty in traditional settings, and if so, how context impacts the level of resistance to change.

Sampling and Sampling Procedures

The sampling frame includes a complete list of sampling units in a given population. This level of information is usually not available, so researchers use less comprehensive substitute lists. The researcher must ensure a high level of agreement between the sampling frame and the sampling population. The sampling frame has an influence on all aspects of the sample design (Frankfort-Nachmias & Nachmias, 2008).

The method used when sampling can greatly affect the value of the survey. The potential for coming to an erroneous conclusion considerably increases when poor sampling choices take place (McBurney & White, 2010).

The sampling strategy employed for this research was a nonprobability convenience sample. For my study, all members of the population received an invitation to participate. This study included the use of a web-based survey. Web questionnaires offer many advantages, such as reduced cost, time savings, and flexibility. A common disadvantage of web surveys is low response rates. Response rates can be low when compared to in-person interviews or paper surveys (Singleton & Straits, 2005, p. 244). In a review of online versus paper-based survey response rates, Nulty (2008) compared nine studies, determining that the average online response rate was 33%, and the average paper-based response rate was 56% (pp. 302-303). If the response rate had been lower than expected for my study, I would have extended the time period and sent a reminder email to all faculty at the online university.

Sample Size and Power Analysis

To determine relationships between the independent variables and the dependent variable it is important to establish the appropriate sample size. I conducted a power analysis using G*Power 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009) to determine the sample size for my study. This tool provides a method for calculating the appropriate sample size based on effect size, alpha level, and power level input.

Three predictors determined the appropriate sample size: trust in leadership, frequency of change, and history of change. I used an a priori multiple linear regression: fixed model R^2 increase power analysis with two tails. The alpha level determines the risk

of committing a Type I error, or the probability of incorrectly rejecting the null hypothesis (Ellis, 2010, p. 56). A significance level ($\alpha = .05$) was chosen for determining the sample. Alpha is normally set at $\alpha = .05$ or lower (Cowles & Davis, 1982, p. 553). The statistical power is related to the Type II error rate, commonly designated as β. If .20 is the acceptable level of β, then the power is .80 ($1 - \beta$) (Ellis, 2010, p. 56).

The effect size indicates the degree to which a phenomenon is present in a population, or in other words, what effect can be detected by the chosen statistical test (Cohen, 1988, p. 10). Effect sizes for multiple regression range from .02 for small, .13 to .15 for medium, and .26 to .35 for large effect sizes (Cohen, 1988). Using these parameters and results from studies using similar constructs (Herold et al., 2008), I calculated a minimum sample size of 77 to achieve .80 statistical power (1-β), and a medium effect size of .15.

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

Data collection included a self-administered survey link sent through the university employee email system. The survey, accompanied by a letter of explanation, served as the recruitment method for participation in the study. The explanation included the purpose of the study, detailed instructions, and the benefits of completing and submitting the survey. The instrument addressed questions specifically related to the study problem statement, and demographic information including gender, age, employment classification, and length of employment. When accessing the website, participants first saw a welcome message, followed by a voluntary consent form. Completion and submittal of the survey acted as consent to participate in the research study. Survey questions focused on perceptions of trust in leadership, frequency of

organizational change, history of organizational change, and resistance to change. The survey instrument used an online survey provider acceptable to Walden University guidelines. All data is protected via encryption and stored in a password protected system. Participant identities are unknown to the researcher and the data was delivered in aggregate form. All data collection and reporting of study results follow the policies and procedures outlined by the Walden University Institutional Review Board.

Instrumentation and Operationalization of Constructs

The study variables in this analysis were resistance to change, trust in leadership, frequency of change, and history of change. I also included descriptive statistics on demographic information including gender, age, employment classification, and length of employment to characterize the sample (for more information see the Delimitations section in Chapter 1).

In a review of the literature, I found appropriate instruments for examining the constructs; each used in studies measuring the same or similar questions as those raised in the current study. The variables were measured using four survey instruments: the perceptions of organizational change scale (Rafferty & Griffin, 2006); the change leadership scale (Herold et al., 2008); the measures of trust and trustworthiness scale (Mayer & Davis, 1999); and the resistance to change scale (Oreg, 2003). Developers gave permission (Appendix A) to use their instruments. The four original instruments had Likert scales ranging from five to seven response values. To increase the reliability of my study, I selected a 7-point scale for my entire instrument. I chose the following wording for the response values: 1 – Strongly disagree, 2 – Disagree, 3 – Somewhat disagree, 4 – Neither agree nor disagree, 5 - Somewhat agree, 6 – Agree, 7 – Strongly agree. My

instrument included 42 Likert scale questions and 4 demographic questions. The estimated time to complete the survey was 10-15 minutes.

Measuring resistance to change. The participant's resistance to change was measured by Oreg's (2003) resistance to change scale. Oreg created a 17-item instrument using a 6-point Likert-type scale, with the resistance to change score being the mean of the 17 items. In a defense industry study using this instrument, Oreg (2006) reported a reliability coefficient (Cronbach's alpha) of 0.86. A variety of studies validate the instrument with a consistent demonstration of high reliability and structural stability. Sample items include, "I generally consider changes to be a negative thing" and "When things don't go according to plans, it stresses me out" (p. 86). I averaged the scores to determine a single number to facilitate operationalizing of the resistance to change data. A high numerical score would indicate a high level of resistance to change. For my instrument, I used 13 of the original 17 questions. The original survey used a 6-point scale when reliability was determined. I increased my scale to 7 points to help insure reliability of my modified version.

Measuring trust in leadership. The participant's trust in leadership was measured by Mayer and Davis's (1999) measures of trust and trustworthiness scale. Mayer and Davis created a 41-item instrument using a 5-point Likert-type scale. The scale design includes measures to reflect ability, benevolence, integrity, propensity, and trust. Mayer and Davis reported that a confirmatory factor analysis from a 1999 manufacturing firm study indicated that the factors of trustworthiness are distinct, and that the individual factors each have acceptable reliabilities (Cronbach's alpha = 0.93, 0.95, 0.96, 0.71, 0.82, respectively) (p. 127). I used three subsections measuring ability,

benevolence, and integrity. Other researchers successfully combined these three subsets to form a single measure of trust (Amogbokpa, 2010). All of the selected subsections directly relate to organizational trust. I averaged all scores from the subsets to determine a single number to facilitate operationalizing of the trust data. A high numerical score would indicate a high level of trust in leadership. Sample items include, "Top management is very capable of performing its job" and "I would be comfortable giving top management a task or problem which was critical to me, even if I could not monitor their actions" (p. 136). For my instrument, I used 16 of the original 17 subset questions. The original survey used a 5-point scale when reliability was determined. I increased my scale to 7 points to help insure reliability of my modified version.

Measuring frequency of change. The participant's perception of the frequency of organization change was measured by Rafferty and Griffin's (2006) perceptions of organizational change scale. I used three questions from the frequent change subsection of the instrument. I averaged all scores from the subset to determine a single number to facilitate operationalizing of the frequency of change data. A high numerical score would indicate a high frequency of change. In a 2006 study conducted in a large public sector organization, Rafferty and Griffin reported a reliability coefficient (Cronbach's alpha) of 0.76 for the frequent change behaviors. Sample items include, "Change frequently occurs in my unit" and it is difficult to identify when changes start and end" (p. 1157). For my instrument, I used all of the subset questions from the original instrument. The original instrument used a 7-point scale when reliability was determined, which I maintained to keep the response values consistent.

Measuring history of change. To measure the participant's perceptions of history of change, I used subsets from two existing instruments. First, I used the Herold et al.'s (2008) change leadership scale. Herold et al. developed a 29-item instrument using a 6-point Likert-type scale. The scale design allows measurement of both transformational leadership (22 items) and change leadership (7 items). I used the seven change-leadership items, which reflect perceptions of the organization's history of change. The seven subsection scores were averaged to determine a single number.

In a study of 30 banking and information technology firms, Herold et al. (2008) reported a reliability coefficient (Cronbach's alpha) of 0.89 for the change-leadership behaviors. Sample items include, "My leader made it clear up front to those in our unit why the change was necessary" and "My leader empowered people to implement the change" (p. 357).

For the second history of change instrument, I used three questions from the Rafferty and Griffin (2006) perceptions of organizational change scale. Rafferty and Griffin developed a 13-item instrument using a 7-point Likert-type scale. The scale design allows measurement of frequent change, planned change, transformational change, and uncertainty. The three questions came from the subset of planned change (Cronbach's alpha score of 0.90). Sample items include, "Change has involved prior preparation and planning by my manager or unit" and "Change has been the result of a deliberate decision to change by my management" (p. 1157). The selected subsection directly relates to the organization's history of change.

I calculated average subset scores from Herold et al. and from Rafferty and Griffin's instruments to operationalize the history of change data. A high numerical score

indicated a positive experience during past changes. For my instrument, I used all of the original subset questions from both existing instruments. The original instruments used a 6-point and 7-point scale, respectively when reliability was determined. Though I did not modify the subset, I increased my scale to 7 points to keep the response values consistent.

Data Analysis Plan

Quantitative data analysis consisted of two stages: descriptive statistics and regression analysis. A demographic descriptive data analysis included categorical variables that identify the participants' gender, age, employment classification, and length of employment. In Chapter 4, I report frequency and percentage data for the demographic variables.

For the inferential statistical analysis, I used multiple linear regression (Frankfort-Nachmias & Leon-Guerro, 2006). Multiple linear regression is a statistical method used to determine the extent to which two or more independent variables have an effect on a dependent variable (pp. 293-294). For this study, this included the extent to which the independent variables of trust in leadership, frequency of change, and history of change were related to the dependent variable (resistance to change). The data were a convenience sample from the population, with the score from each variable being independent of the scores on the other variables. I examined the data to verify that there is no issue with multicollinearity among the independent variables. Results were diagnosed by calculating the variance inflation factor (VIF) for each independent variable. I assumed that the variables are multivariately normally distributed in the sample (and checked this assumption during the analysis). I used quantitative data cleaning (Nolan & Heinzen, 2012, p. 182) to identify any missing data, which could

influence the resultant relationships. The raw data were input into Statistical Package for the Social Sciences (SPSS, v22.0) for data analysis.

Research Question and Hypotheses

The following research question and hypotheses were designed to explore the relationships between the independent variables of trust in leadership, frequency of change, and history of change; and the dependent variable, resistance to change.

RQ: What is the relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable (resistance to change) among online university faculty?

H_0: There is no relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable (resistance to change) among online university faculty.

H_1: There is a relationship between at least one of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable (resistance to change) among online university faculty.

The general form of the regression equation is as follows:

$$Y_j = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k + \varepsilon.$$

The estimate of the true regression equation is as follows:

$$Y_j\text{-}hat = b_0 + b_1 X_1 + b_2 X_2 + \ldots + b_k X_k.$$

The following is the mathematical expression of the hypothesis:

$H1_0$: No independent variables (X_i) influence the dependent variable, Y.

All $\beta s = 0$.

$H1_A$: At least one β_i is not equal to zero.

If the *F*-test showed that at least one β is not zero, then I used a *t*-test for βs that are not equal to zero.

$H2_0$: $\beta_i = 0$.

$H2_A$: β_i does not equal zero.

If I rejected the null hypothesis, then I concluded that β_i is not equal to zero.

If a $\beta_i = 0$, then I concluded that the independent variable X_i did not exert a significant influence on the dependent variable, *Y*.

Threats to Validity

Validity of measurement is concerned with ensuring that the researcher is measuring what they said they would measure. In other words, how valid are the conclusions drawn from testing the hypotheses (Frankfort-Nachmias & Nachmias, 2008, p. 149). Trochim (2001) described validity as the approximate truth of a conclusion, inference or proposition (p. 42). To emphasize truth in this study, participants are encouraged to respond to survey questions in a way that most closely represents their true emotions and perceptions experienced during or due to organizational change. In reference to external and internal validity, Mounteney, Fry, McKeganey, and Haugland (2010) stated that, "External validity refers to the extent to which findings can be generalized to other persons places, or times" and "Internal validity relates to causal relationships and addresses the key question of whether observed changes can be attributed to a particular programme or intervention and not to other alternative explanations for outcome" (p. 272).

External validity concerns exist concerning the use of electronic web-based surveys. One such concern is that the study is limited to participants with access to the Internet. In this study, all of the participants have Internet access as a requirement for their employment at the university. A threat to validity could result from either non-response or low response rates. Potential respondents can easily ignore or put off completing an online survey until forgotten. Limiting the number of survey questions is one way of overcoming this potential threat.

Hypothesis guessing (or Hawthorne effect) is a potential external validity threat. This takes place when respondents make assumptions or guesses about the hypothesis (or researcher's agenda) and responds based on their assumptions. The cover letter and consent form addressed this threat.

Population validity or representativeness of the sample is another external threat to validity. A highly representative sample provides confidence in generalizing from the sample to the population. Population validity should be less of a concern because all study participants work in similar conditions where significant changes are generally experienced university-wide. Respondent experiences are not likely to differ from those of the rest of the population.

Another external threat is the participants' fear of reprisal. The risks to participants from responding to the survey are minimalized by their anonymity, creating no concern for testing reactively or overly positive or negative responses due to fear of reprisal.

History is a potential threat to internal validity. This could be a factor if an unexpected significant change takes place during the survey period. An event such as a

large reduction in force could affect the outcome of the study. I did not have control over this; however, the threat was minimalized by keeping the survey open only as long as necessary to achieve the desired sample. Recall bias is another internal threat to validity, particularly when studies use self-reported data. Survey participants answer questions based on perceptions of past events relying on memory, which may or may not be accurate. One method for minimizing this threat is to ask questions about general perceptions rather than specific past events. Other threats to internal validity include concerns for statistical regression, maturation, or experimental mortality. The research for this study did not include a treatment and was conducted at a single point in time, so these potential threats were not a concern.

Ethical Procedures

The researcher has an obligation to protect the confidentiality and anonymity of participants at all costs unless prior arrangements to the contrary have been made (Frankfort-Nachmias & Nachmias, 2008, p. 78). Ethical research standards were considered during each phase of this study. Respondents were advised that their participation was voluntary, and that anonymity would be strictly enforced. All participants received an explanation for the purpose of the study, and were advised that there is no penalty for choosing to not participate. Faculty had the option of not participating by not answering specific questions or by not submitting the survey.

Data was stored in a safe location, and protected by encryption, and will remain so for the required period of five years and then destroyed. Notification of Approval to Conduct Research (#07-06-15-0027636) was obtained from the Walden University Review Board to ensure ethical protection of the participants. The employer where the

study took place also required approval from their own Institutional Review Board (Protocol #15-29). Contact information was provided to participants for addressing any concerns.

Summary

In summary, through this quantitative research study I examined the potential relationships between the independent variables of trust in leadership, frequency of change, and history of change, and on the dependent variable (resistance to change). This chapter presented an overview of the methodology and the design for conducting the research. I described the research approach and design, as well as the rationale for the study. I laid out the research questions and hypotheses to explain how I met study objectives. I collected survey data using an instrument developed from a combination of four existing scales. I entered the data into SPSS and analyzed using descriptive and regression statistics. Finally, the chapter described the ethical protections used for this study. In Chapter 4, I present and discuss the results from this quantitative study. The review includes the demographic characteristics of the sample, and a statistical analysis for the hypothesis.

Chapter 4: Results

The purpose of my quantitative study was to gain insight into how certain contextual elements related to organizational change affect online university faculty; specifically, how trust in leadership, frequency of change, and history of change can have an impact on what is commonly believed to be a major cause of organizational change failure: resistance to change. The research question in the study addressed the relationships between certain change-specific contextual elements and resistance to change among online university faculty. I hypothesized that there would be a relationship between at least one of the independent variables of trust in leadership, frequency of change, and history of change and the dependent variable, resistance to change, among online university faculty.

Chapter 4 begins with a description of the data collection methods including participant recruiting processes. I present the statistical results in four sections: (a) a summary of the demographic characteristics of the participants, along with a description of how well the pool of participants represented the total population, (b) instrumentation constructs and reliability, (c) investigation of assumptions as they relate to regression analysis, and (d) tests of hypotheses. The chapter concludes with a summarization of the research question findings. I used SPSS for all descriptive and inferential analyses.

Data Collection

I collected data via a self-administered survey link sent through the case study university employee email system. The sampling strategy employed for this research was a nonprobability convenience sample. Participants were provided instructions indicating that it would take approximately 15-20 minutes to complete the survey, and that all

submission were anonymous. The total population of 2,525 online faculty members were invited to complete the survey. The invitation was send via e-mail, which included an informed consent statement, instructions, and a hyperlink for accessing the Internet survey. The survey consisted of 29 items measuring the participant's perceptions of trust in leadership, frequency of change, and history of change in the organization. Also included were 13 questions measuring the participant's resistance to change. The survey concluded with four demographic questions included for characterizing the pool of participants. The questions asked respondents to indicate gender, age, employment classification, and length of employment. The Internet survey was open for two weeks. A total of 189 completed surveys were received for analysis, which provided a 7% response rate (189/2525). This exceeded the minimum sample size calculated in Chapter 3 (77), which added power and confidence to the statistical tests employed.

I performed univariate analyses to determine homogeneity between the levels of the demographic variables of (a) gender, (b) employment classification group, and (c) length of employment group, as relates to the dependent variable (resistance to change). This exercise also helped to screen all of the independent variables to determine which to consider in the multiple regression analysis. Table 4 illustrates the results of the univariate analyses.

No results of the univariate analyses were significant ($p > .05$), except for gender, indicating that the mean scores of the resistance to change variable did not differ significantly between the levels of each of the demographic variables. Thus, I demonstrated homogeneity between the levels of the demographic variables. However, the demographic variable of gender was significant ($p < .05$), and I decided to include a

dichotomous variable for gender in the multiple regression analysis to see if gender had a significant effect on the resistance to change score after controlling for the other variables in the model. The remaining demographic variables were not included in the regression models because they were not significant. Thus, to include the other demographic variables in the model would not contribute additional information and would reduce power of the analysis.

Table 4

Findings of Univariate Analyses Performed to Investigate Homogeneity between the Levels of the Demographic Variables on the Dependent Variable (Resistance to Change)

Variable/Level	Quantity.	*M*	*SD*	Null Hypothesis	Test Used	Test Statistic	*p*
Gender				$\mu_1 = \mu_2$	Independent samples t-test	t = 1.97	.050
Male	62	3.31	0.85				
Female	127	3.06	0.82				
Employment classification				$\mu_1 = \mu_2$	Independent samples t-test	t = -0.04	.971
Part-time	123	3.13	0.84				
Full-time	66	3.14	.084				
Length of employment				$\mu_1 = \mu_2 = \mu_3 = \mu_4$	Analysis of variance	F = 0.62	.602
Less than one year	3	3.46					
One to three years	23	3.19					
Four to nine years	123	3.17					
Ten years or more	40	2.99					

Note. $N = 189$; M = Mean; SD = Standard Deviation; p = p-value.

Study Results

Descriptive Findings

The participants ($N = 189$) included full-time and part-time adjunct faculty teaching as online faculty working in higher education for a large university. Table 5 presents the frequencies and percentages of the demographic variables collected for the

participants. The majority of participants were female (67%). Sixty-four percent of the participants were between 45 and 64 years of age. One hundred and twenty three participants (65%) were employed part-time, and the majority of participants (65%) had been employed at the university between four and nine years.

Table 5

Frequency Counts and Percentages of the Demographic Variables of Study

Variable	Frequency	Percent
Gender		
Male	62	32.8
Female	127	67.2
Age		
25 – 34 years	8	4.2
35 – 44 years	38	20.1
45 – 54 years	52	27.5
55 – 64 years	70	37.0
Greater than 64 years	21	11.1
Employment classification		
Part-time	123	65.1
Full-time	66	34.9
Length of employment		
Less than 1 year	3	1.6
1 – 3 years	23	12.2
4 – 9 years	123	65.1
10 years or more	40	21.2

Note. $N = 189$

Instrumentation and Derived Constructs

The variables included in the multiple regression analysis were (a) resistance to change, (b) trust in leadership, (c) frequency of change, and (c) history of change. Resistance to change was the dependent variable, and the other three variables were independent variables. I measured the variables using four survey instruments: the

perceptions of organizational change scale (Rafferty & Griffin, 2006); the change leadership scale (Herold & Fedor, Caldwell, & Liu, 2008); the measures of trust and trustworthiness scale (Mayer & Davis, 1999); and the resistance to change scale (Oreg, 2003). Developers gave permission (Appendix A) to use their instruments. The four original instruments had Likert scales ranging from five to seven response values. To increase the reliability of my study, I selected a 7-point scale for my entire instrument. I chose the following wording for the response values: 1 – Strongly disagree, 2 – Disagree, 3 – Somewhat disagree, 4 – Neither agree nor disagree, 5 – Somewhat agree, 6 – Agree, 7 – Strongly agree. My instrument included 42 Likert scale questions and four demographic questions.

Resistance to change. I used Oreg's (2003) resistance to change scale to measure participants' resistance to change. I used 13 of the original 17 questions, and then averaged the responses to derive a numerical score for each participant. The possible range of scores was between 1 and 7, with higher numerical scores indicative of higher levels of resistance to change. I used resistance to change as the dependent variable of the multiple regression analysis.

Trust in leadership. The participants' trust in leadership was measured by Mayer and Davis's (1999) measures of trust and trustworthiness scale. I used three subsections, with six questions measuring ability, three questions measuring benevolence, and six questions measuring integrity. I averaged the items for each of the three subsections to derive a score for each participant. Then I computed the average of the three subsection scores to derive a single measure of trust (trust in leadership–composite) for each participant (Amogbokpa, 2010). The possible scores ranged from 1 to 7, with higher

numerical scores indicative of a higher level of trust in leadership. I used trust in leadership as one of the independent variables in the multiple regression analysis.

Frequency of change. The participants' perception of the frequency of organization change was measured by Rafferty and Griffin's (2006) perceptions of organizational change scale. I used three questions from the frequent change subsection of the instrument. I averaged the three responses to the three questions to determine a single number to facilitate operationalization of the frequency of change variable. The possible scores ranged from 1 to 7, with higher numerical scores indicative of a perceived high frequency of change. I used frequency of change as one of the independent variables in the multiple regression analysis.

History of change. Participants' perceptions of history of change was assessed with items derived from two existing instruments, I used a subset of seven questions from Herold et al.'s (2008) change leadership scale, and a subset of three questions from Rafferty and Griffin's (2006) perceptions of organizational change scale. I averaged each participant's responses to the 10 questions to determine a single number to facilitate operationalization of the history of change variable. The possible scores ranged from 1 to 7, with higher numerical scores indicative of a positive experience during past changes in the organization. I used history of change as one of the independent variables in the multiple regression analysis.

Reliability

Table 6 presents the measures of central tendency and the Cronbach's coefficient alpha coefficients for the seven variable constructs used to develop the variables for the multiple regression analysis addressing the null hypothesis of this study. Cronbach's

coefficient alpha is a measure of internal consistency reliability. A Cronbach's coefficient alpha value of .70 or greater indicates good reliability of an instrument with the data collected (Tabachnick & Fidell, 2007).

The modified scales used in my study had similar Cronbach's Alpha coefficients as those found in earlier studies. Oreg (2006) using an extended version of the resistance to change scale reported a Cronbach's Alpha coefficient of .86. Using the same subsets found in my study from the Mayer and Davis (1999) measures of trust and trustworthiness scale, Lester and Brower (2003) reported reliability coefficients of >.75. Rafferty and Griffin (2006), using their change scale, reported a Cronbach's Alpha of .76 for the frequent change behavior questions used in my study. The subset I used to evaluate history of change included a combination of questions from two existing scales. Seven questions were from Herold et al.'s (2008) change leadership scale, where a Cronbach's alpha of .89 was reported. The remaining three questions were from Rafferty and Griffin's (2006) change scale, where Cronbach's alpha values were reported as >.76. The remaining seven questions were from Herold et al.'s (2008) change leadership scale, where a Cronbach's alpha of .89 was reported. The values computed for my survey were all over .70, indicating that the subscales were internally consistent.

Table 6

Measures of Central Tendency and Variability, and Cronbach's Alpha Coefficients, for the Variable Construct Scores

Variable Construct	*M*	*SD*	*Mdn*	Sample Range	α
Resistance to change	3.13	0.84	3.08	1.23 – 5.31	.844
Trust in leadership–ability subsection	4.98	1.43	5.17	1.00 – 7.00	.963
Trust in leadership–benevolence subsection	4.39	1.66	4.67	1.00 – 7.00	.931
Trust in leadership–integrity subsection	4.81	1.30	5.00	1.00 – 7.00	.908
Trust in leadership–composite	4.73	1.38	5.06	1.17 – 7.00	.933
Frequency of change	4.38	1.28	4.33	1.67 – 7.00	.739
History of Change	4.98	1.36	5.10	1.00 – 7.00	.950

Note. $N = 189$. N = Sample Size; M = Mean; SD = Standard Deviation; Mdn = Median; α = Cronbach's coefficient alpha.

Assumptions

I investigated the dataset for the regression assumptions of absence of outliers, normality, linearity, and homoscedasticity as relates to the seven variable constructs. I used SPSS Explore to investigate the assumptions related to normality and absence of outliers (Appendix C). I investigated linearity between the variable constructs used in regression with a visual inspection of residual scatterplots (Appendix D). The assumptions relating to homoscedasticity, homogeneity of variance, and independence of the residuals were investigated using histograms and residual plots, which were included in the regression, output (Appendix D).

Outliers in a dataset have the potential to distort results of an inferential analysis because they can pull the mean from the true center (median) of the data distribution. I

performed a check of boxplots (Appendix C) for the seven variables to visually inspect for outliers. According to Tabachnick and Fidell (2007), outliers are cases with standardized scores with residual values in excess of 3.29 (p. 73). The boxplots indicated that the frequency of change construct had one outlier. However, the value of the outlier (frequency of change score = 1.67) was within the possible range of values for the frequency of change construct. Additionally, the mean (M = 4.38) and median (Mdn = 4.33) of the frequency of change variable were close in value, suggesting that the outlier was not pulling the mean of the distribution from the true center. I retained the outlier for analysis.

I investigated normality for the scores of the seven variables with SPSS Explore. The Kolmogorov-Smirnov test for normality indicated that only the construct of resistance to change was normal at the p = .01 level. A visual check of histograms and normal Q-Q plots for the variable constructs indicated normal distributions for all seven constructs (Appendix C). A comparison of the means and medians of the seven constructs (see Table 6 and Appendix C) indicated the measures of central tendency were close in value, thus indicating that skew of deviations from normality were not adversely affecting the distribution of the variables. Therefore, I did not consider the assumption of normality violated. I concluded that transformations of the variables were not necessary to perform the regression analysis.

I checked assumptions of linearity between study variables and homoscedasticity, requirements for correlation and regression analyses with scatterplots of the data (Appendix D). The assumptions of linearity and homoscedasticity were not violated. Multicollinearity diagnostics of the independent variables used in the multiple regression

were performed using SPSS via correlational analysis. Multicollinearity is defined as a correlation between two variables of $r = .90$ or greater (Pallant, 2013, p. 164). Although the three trust in leadership subsection variables were highly correlated with the composite trust in leadership variable, the subsection variables were not used in the same regression model as the composite trust in leadership variable. Also, the tolerance levels and variance inflation factors were checked in the regression output and neither indicated multicollinearity (Table 8). Therefore, I met the assumption of absence of multicollinearity.

Regression Analysis

The research question of this study was, what is the relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable (resistance to change) among online university faculty?

First, I performed a series of Pearson's product moment correlations prior to building the multiple regression models to investigate the bi-variate relationships of the variable constructs. Table 7 presents the results from the correlational analyses. Correlations with an absolute value of .10 to .29 are considered weak, .30 to .49 are considered moderate, and .50 to 1.0 are considered strong (Cohen, 1988, pp. 79-81). A direct (positive) correlation indicates that the two variables move in a like manner, when the values of one variable increase, so do the values of the other variable. Similarly, when the values of one variable decrease, so do the values of the other variable. An indirect (negative) correlation is indicative of the two variables moving in opposite directions,

such that when the values of one variable increase, the values of the other variable decrease.

The dependent variable (resistance to change) was not significantly correlated with any of the other six variable constructs. Trust in leadership–ability had strong and direct correlations with trust in leadership–benevolence ($r = .788$, $p < .0005$), trust in leadership–integrity ($r = .864$, $p < .0005$), trust in leadership–composite ($r = .932$, $p < .0005$), and history of change ($r = .611$, $p < .0005$). Trust in leadership–ability had a moderate indirect correlation with the frequency of change variable ($r = -.352$, $p < .0005$).

Trust in leadership–benevolence had strong direct correlations with trust in leadership–integrity ($r = .865$, $p < .0005$), trust in leadership–composite ($r = .944$, $p < .0005$), and history of change ($r = .577$, $p < .0005$). Trust in leadership–benevolence had a moderate indirect correlation with the frequency of change variable ($r = -.316$, $p < .0005$).

Trust in leadership–integrity had strong direct correlations with trust in leadership–composite ($r = .958$, $p < .0005$), and history of change ($r = .638$, $p < .0005$). Trust in leadership–integrity had a moderate and indirect correlation with frequency of change ($r = -.387$, $p < .0005$).

Trust in leadership–composite had a strong and direct correlation with history of change ($r = .642$, $p < .0005$), and a moderate and indirect correlation with frequency of change ($r = -.370$, $p < .0005$). Frequency of change was also moderately and indirectly correlated with history of change ($r = -.313$, $p < .0005$).

Table 7

Pearson's Product Moment Correlation Coefficients for Variable Constructs Used for Regression Analysis

Variable	1	2	3	4	5	6
1. Resistance to change	---					
2. Trust in leadership–ability subsection	-.004	---				
3. Trust in leadership–benevolence subsection	-.122	.788**	---			
4. Trust in leadership–integrity subsection	-.135	.864**	.865**	---		
5. Trust in leadership–composite	-.093	.932**	.944**	.958**	---	
6. Frequency of change	.053	-.352**	-.316**	-.387**	-.370**	---
7. History of change	-.004	.611**	.577**	.638**	.642**	-.313**

Note. $N = 189$; * $p < .05$; ** $p < .01$

Regression Model 1: Hypothesized Model

I performed a multiple regression with the dependent variable (resistance to change) regressed onto three independent variable predictors of (a) trust in leadership–composite, (b) frequency of change, (c) history of change, and (d) gender. Gender was coded as male = 1 and female = 0. The null and alternative hypotheses were as follows:

H_0: There is no relationship between any of the independent variables of (a) trust in leadership, (b) frequency of change, (c) history of change, or (d) gender; and the dependent variable (resistance to change) among online university faculty.

$$\beta_{\text{trust in leadership}} = \beta_{\text{frequency of change}} = \beta_{\text{history of change}} = \beta_{\text{gender}} = 0$$

H_a: There is a relationship between at least one of the independent variables of (a) trust in leadership, (b) frequency of change, (c) history of change, or (d) gender, and the dependent variable (resistance to change) among online university faculty.

$$\text{At least one } \beta i \neq 0$$

Table 8 presents the model coefficients, standard errors, and p-values of the model predictors.

Table 8

Multiple Regression Results for Resistance to Change Regressed on the Independent Variables

Variable	B	*SE* B	*β*	*t*	*p*	Tol.	VIF
Trust in leadership–composite	-0.08	0.06	-0.14	-1.41	.159	0.56	1.80
Frequency of change	0.02	0.05	0.03	0.33	.742	0.85	1.17
History of change	0.06	0.06	0.09	0.96	.337	0.58	1.72
Gender	0.24	0.13	0.14	1.89	.060	1.00	1.00
Constant	3.10	0.41	---	---	---	---	---
Model Summary		$F = 1.59$, $p = .180$ $N = 189$ $R^2 = .033$ Adjusted $R^2 = .012$					

Note. B = Unstandardized Model Coefficients; *SE* B = Standard Error of the Model Coefficients; *β* = Standardized Regression Coefficients; *t* = t Statistics; *p* = Significance; Tol. = Tolerance; VIF = Variance Inflation Factor.

Conclusion for hypothesis of overall model fit. Regression results are depicted in Table 8: F (4, 184) = 1.59, p = .180, with R^2 of .0133 (.012 adjusted). I failed to reject the null hypothesis, and concluded there is insufficient evidence that the overall regression model (with all four predictor variables) was significant. There is not sufficient evidence to indicate a significant relationship between at least one of the independent variables of trust in leadership, frequency of change, history of change, or gender; and the dependent variable (resistance to change) among online university faculty. The p value for gender was .06, technically not significant but close enough to the level of significance that it warranted inclusion in the model in subsequent multiple linear regression analyses.

The adjusted R^2 value (.012) indicated that approximately 1% of the variability in the dependent variable (resistance to change) was predicted by the four independent variable predictors in the model. In other words, the model non-significance and low R^2 was indicative of a poor model fit. I then looked further into the findings of the model fit and the individual model coefficients.

Conclusion as relates to the trust in leadership predictor. The specifications for the hypothesis test of the trust in leadership predictor are as follows:

H_0: The coefficient of the trust in leadership variable is equal to zero.

$$\beta_{\text{trust in leadership}} = 0$$

H_a: The coefficient of the trust in leadership variable is not equal to zero.

$$\beta_{\text{trust in leadership}} \neq 0$$

Do not reject the null hypothesis: $B = -0.08$, $t\ (184) = -1.41$, $p = .159$; 95% CI (-0.20, 0.03). There is not sufficient evidence to indicate that the coefficient for the trust in leadership predictor is not equal to zero. Trust in leadership was not a significant predictor of resistance to change.

Conclusion as relates to the frequency of change predictor. The specifications for the hypothesis test of the frequency of change predictor are as follows:

H_0: The coefficient of the frequency of change variable is equal to zero.

$$\beta_{\text{frequency of change}} = 0$$

H_a: The coefficient of the frequency of change variable is not equal to zero.

$$\beta_{\text{frequency of change}} \neq 0$$

Do not reject the null hypothesis: $B = 0.02$, $t\ (184) = 0.33$, $p = .742$; 95% CI (-0.09, 0.12). There is not sufficient evidence to indicate that the coefficient for the frequency of change

predictor is not equal to zero. Frequency of change was not a significant predictor of resistance to change.

Conclusion as relates to the history of change predictor. The specifications for the hypothesis test of the history of change predictor are as follows:

H_0: The coefficient of the history of change variable is equal to zero.

$$\beta_{\text{history of change}} = 0$$

H_a: The coefficient of the history of change variable is not equal to zero.

$$\beta_{\text{history of change}} \neq 0$$

Do not reject the null hypothesis: $B = 0.06$, $t\ (184) = 0.96$, $p = .337$; 95% CI (-0.06, 0.18). There is not sufficient evidence to indicate that the coefficient for the history of change predictor is not equal to zero. History of change was not a significant predictor of resistance to change.

Conclusion as relates to the gender predictor. The specifications for the hypothesis test of the gender predictor are as follows:

H_0: The coefficient of the gender variable is equal to zero.

$$B_{\text{gender}} = 0$$

H_a: The coefficient of the gender variable is not equal to zero.

$$B_{\text{gender}} \neq 0$$

Do not reject the null hypothesis: $B = 0.24$, $t\ (184) = 1.89$, $p = .060$; 95% CI (-0.01, 0.50). There is not sufficient evidence to indicate that the coefficient for the gender predictor is not equal to zero. Gender was not a significant predictor of resistance to change; however, it should be noted that $p = .060$ is very close to the alpha of 0.05. Although the predictor for gender

was not significant at the $p < .05$ level, it was significant at the $p < .10$ level. Therefore, I decided to include the gender variable in the adapted model (Regression Model 2).

Regression Model 2: Adapted Model

In my first regression analysis, I failed to reject the null hypotheses for the overall model or the individual coefficients. I then attempted a better model fit by replacing the trust in leadership–composite variable with the three sub-factor variables of (a) trust in leadership–ability, (b) trust in leadership–benevolence, and (c) trust in leadership–integrity. The variables of frequency of change and history of change remained in the model, along with the variable of gender. The null and alternative hypotheses were as follows:

H_0: There is no relationship between any of the independent variables of (a) trust in leadership-ability, (b) trust in leadership-benevolence, (c) trust in leadership-integrity, (d) frequency of change, (e) history of change, and (f) gender and the dependent variable (resistance to change) among online university faculty.

$$\beta_{\text{trust in leadership-ability}} = \beta_{\text{trust in leadership-benevolence}} = \beta_{\text{trust in leadership-integrity}} = \beta_{\text{frequency of change}} = \beta_{\text{history of change}} = \beta_{\text{gender}} = 0$$

H_a: There is a relationship between at least one of the independent variables of (a) trust in leadership-ability, (b) trust in leadership-benevolence, (c) trust in leadership-integrity, (d) frequency of change, (e) history of change, and (f) gender and the dependent variable (resistance to change) among online university faculty.

At least one βi is $\neq 0$

Table 9 presents the model coefficients, standard errors, and p-values of the model predictors.

Table 9

Multiple Regression Results for Resistance to Change Regressed on the Independent Variable, with subsection scores of Trust in Leadership Instead of the Trust in Leadership–Composite

Variable	B	*SE* B	*B*	*t*	*p*	*Tol.*	*VIF*
Trust in leadership–ability subsection	0.27	0.08	0.46	3.21	.002	0.24	4.16
Trust in leadership–benevolence subsection	-0.05	0.07	-0.09	-0.64	.523	0.24	4.09
Trust in leadership–integrity subsection	-0.32	0.12	-0.51	-2.82	.005	0.15	6.51
Frequency of change	0.01	0.05	0.02	0.18	.855	0.84	1.19
History of change	0.06	0.06	0.09	1.01	.313	0.57	1.75
Gender	0.28	0.13	0.16	2..20	.029	0.99	1.01
Constant	3.12	0.42	---	---	---		
Model Summary	$F = 3.38$, $p = .004$ $N = 189$ $R^2 = .10$ Adjusted $R^2 = .07$						

Note. B = Unstandardized Model Coefficients; *SE* B = Standard Error of the Model Coefficients; β = Standardized Regression Coefficients; *t* = t Statistics; *p* = Significance; Tol. = Tolerance; VIF = Variance Inflation Factor.

Conclusion for hypothesis of overall model fit. Regression results are depicted in Table 9: F (6, 182) = 3.38, p = .004, with R^2 of .10 (.07 adjusted). I reject the null hypothesis, and conclude there is sufficient evidence that the overall regression model (with all six predictor variables) was significant. There is sufficient evidence to indicate a significant relationship between at least one of the independent variables of trust in leadership–ability, trust in

leadership–benevolence, trust in leadership–integrity, frequency of change, history of change, or gender and the dependent variable (resistance to change) among online university faculty.

The adjusted R^2 value of .07 indicated that approximately 7% of the variability in the dependent variable (resistance to change) was predicted by the six independent variable predictors in the model. This low value leaves 93% of the variability unaccounted for, indicating that there are many other factors, which may have an influence on employee resistance to change. Three predictors (a) trust in leadership–ability, (b) trust in leadership–integrity, and (c) gender were statistically significant at the $p < .05$ level. The two significant variables of trust in leadership–ability and trust in leadership–integrity were strongly correlated ($r = .864$, $p < .0005$) but not at the level of multicollinearity, which is typically defined as a positive correlation of $r = .90$ or greater (Pallant, 2007). The values of tolerance and VIF for the two predictors did not show multicollinearity in the regression model. According to Tabachnick and Fidell (2007) multicollinearity of a predictor in a regression model is indicated for tolerance values of .10 or less, or a VIF of 10 or greater. I then looked further into the findings of the model coefficients.

Conclusion as relates to the trust in leadership-ability predictor. The specifications for the hypothesis test of the trust in leadership-ability predictor are as follows:

H_0: The coefficient of the trust in leadership-ability variable is equal to zero.

$$\beta_{\text{trust in leadership-ability}} = 0$$

H_a: The coefficient of the trust in leadership-ability variable is not equal to zero.

$$\beta_{\text{trust in leadership-ability}} \neq 0$$

I reject the null hypothesis: $B = 0.27$, $t\,(182) = 3.21$, $p = .002$; 95% CI (0.10, 0.44). There is sufficient evidence to indicate that the coefficient for the trust in leadership-ability predictor is not equal to zero. Trust in leadership-ability is a significant predictor of resistance to change. The

size and direction of the relationship between trust in leadership–ability and resistance to change suggests that a one point increase in trust in leadership–ability results in a 0.27 point increase of the resistance to change score. This counter-intuitive outcome will be discussed in Chapter 5.

Conclusion as relates to the trust in leadership-benevolence predictor. The specifications for the hypothesis test of the trust in leadership-benevolence predictor are as follows:

H_0: The coefficient of the trust in leadership- benevolence variable is equal to zero.

$$\beta_{\text{trust in leadership-benevolence}} = 0$$

H_a: The coefficient of the trust in leadership- benevolence variable is not equal to zero.

$$\beta_{\text{trust in leadership-benevolence}} \neq 0$$

Do not reject the null hypothesis: $B = -0.05$, $t\ (182) = -0.64$, $p = .523$; 95% CI (-0.19, 0.12). There is not sufficient evidence to indicate that the coefficient for the trust in leadership-benevolence predictor is not equal to zero. Trust in leadership-benevolence was not a significant predictor of resistance to change.

Conclusion as relates to the trust in leadership-integrity predictor. The specifications for the hypothesis test of the trust in leadership-integrity predictor are as follows:

H_0: The coefficient of the trust in leadership-integrity variable is equal to zero.

$$\beta_{\text{trust in leadership-integrity}} = 0$$

H_a: The coefficient of the trust in leadership-integrity variable is not equal to zero.

$$\beta_{\text{trust in leadership-integrity}} \neq 0$$

I reject the null hypothesis: $B = -0.33$, $t\ (182) = -2.82$, $p = .005$; 95% CI (-0.55, -0.10). There is sufficient evidence to indicate that the coefficient for the trust in leadership-integrity predictor is not equal to zero. Trust in leadership-integrity is a significant predictor of resistance to change. The size and direction of the relationship between trust in leadership–integrity and resistance to change suggests that a one point increase in trust in leadership–integrity results in a 0.33 point decrease of the resistance to change score.

Conclusion as relates to the frequency of change predictor. The specifications for the hypothesis test of the frequency of change predictor are as follows:

H_0: The coefficient of the frequency of change variable is equal to zero.

$$\beta_{\text{frequency of change}} = 0$$

H_a: The coefficient of the frequency of change variable is not equal to zero.

$$\beta_{\text{frequency of change}} \neq 0$$

Do not reject the null hypothesis: $B = 0.01$, $t\ (182) = 0.18$, $p = .855$; 95% CI (-0.09, 0.11). There is not sufficient evidence to indicate that the coefficient for the frequency of change predictor is not equal to zero. Frequency of change was not a significant predictor of resistance to change.

Conclusion as relates to the history of change predictor. The specifications for the hypothesis test of the history of change predictor are as follows:

H_0: The coefficient of the history of change variable is equal to zero.

$$B_{\text{history of change}} = 0$$

H_a: The coefficient of the history of change variable is not equal to zero.

$$B_{\text{history of change}} \neq 0$$

Do not reject the null hypothesis: $B = 0.06$, $t\ (182) = 1.01$, $p = .313$; 95% CI (-0.06, 0.17). There is not sufficient evidence to indicate that the coefficient for the history of change predictor is not equal to zero. History of change was not a significant predictor of resistance to change.

Conclusion as relates to the gender predictor. The specifications for the hypothesis test of the history of change predictor are as follows:

H_0: The coefficient of the gender variable is equal to zero.

$$B_{gender} = 0$$

H_a: The coefficient of the gender variable is not equal to zero.

$$B_{gender} \neq 0$$

I reject the null hypothesis: $B = 0.28$, $t\ (182) = 2.20$, $p = .029$; 95% CI (0.03, 0.56). There is sufficient evidence to indicate that the coefficient for the gender predictor is not equal to zero. The size and direction of the relationship between gender and resistance to change suggests that the resistance to change score increases by 0.28 for males when compared to females, holding all other predictor variables constant.

Regression Model 3: Final Model

I performed a multiple regression with the dependent variable (resistance to change) regressed onto the three significant variables from the adapted model: (a) trust in leadership-ability, (b) trust in leadership-integrity, and (c) gender. The null and alternative hypotheses were as follows:

H_0: There is no relationship between any of the independent variables of, (a) trust in leadership-ability, (b) trust in leadership-integrity, and (c) gender and the dependent variable (resistance to change) among online university faculty.

$\beta_{\text{trust in leadership-ability}} = \beta_{\text{trust in leadership-integrity}} = \beta_{\text{gender}} = 0$

H_a: There is a relationship between at least one of the independent variables of, (a) trust in leadership-ability, (b) trust in leadership-integrity, and (c) gender and the dependent variable (resistance to change) among online university faculty.

At least one βi is $\neq 0$

Table 10 presents the model coefficients, standard errors, and p-values of the model predictors.

Table 10

Multiple Regression Results for Resistance to Change Regressed on the Independent Variables

Variable		B	*SE* B	*β*	*t*	*P*
Trust in leadership–ability		0.27	0.08	0.47	3.35	.001
Trust in leadership–integrity		-0.35	0.09	-0.54	-3.86	<.0005
Gender		0.28	0.13	0.16	2.27	.025
Constant		3.45	0.23	---	---	---
Model Summary	$F = 6.35, p < .0005$ $N = 189$ $R^2 = .093$ Adjusted $R^2 = .079$					

Note. B = Unstandardized Model Coefficients; *SE* B = Standard Error of the Model Coefficients; *β* = Standardized Regression Coefficients; *t* = t Statistics; *p* = Significance.

Conclusion for hypothesis of overall model fit. Regression results are depicted in Table 10: $F(3, 185) = 6.35$, $p < .0005$, with R^2 of .093 (.079 adjusted). I reject the null hypothesis, and conclude there is sufficient evidence that the overall regression model was significant. There is sufficient evidence to indicate a significant relationship between at least one of the independent variables of trust in leadership–ability, trust in leadership–integrity, and gender and the dependent variable (resistance to change) among online university faculty. The adjusted R^2 value

of .079 indicated that approximately 8% of the variability in the dependent variable (resistance to change) was predicted by the three independent variable predictors in the model. All three predictors of (a) trust in leadership–ability, (b) trust in leadership–integrity, and (c) gender were statistically significant at the $p < .05$ level. The two significant variables of trust in leadership–ability and trust in leadership–integrity were strongly correlated ($r = .864$, $p < .0005$) and very close to the level of multicollinearity, which is typically defined as a positive correlation of $r = .90$ or greater (Pallant, 2007). The values of tolerance and VIF for the two predictors did not show multicollinearity in the regression model. According to Tabachnick and Fidell (2007) multicollinearity of a predictor in a regression model is indicated for tolerance values of .10 or less, or a VIF of 10 or greater. I then looked further into the findings of the model fit and the individual model coefficients.

Conclusion as relates to the trust in leadership-ability predictor. The specifications for the hypothesis test of the trust in leadership-ability predictor are as follows:

H_0: The coefficient of the trust in leadership-ability variable is equal to zero.

$$\beta_{\text{trust in leadership-ability}} = 0$$

H_a: The coefficient of the trust in leadership-ability variable is not equal to zero.

$$\beta_{\text{trust in leadership-ability}} \neq 0$$

I reject the null hypotheses: $B = 0.27$, $t\,(185) = 3.35$, $p = .001$; 95% CI (0.11, 0.44). There is sufficient evidence to indicate that the coefficient for the trust in leadership-ability predictor is not equal to zero. Trust in leadership-ability is a significant predictor of resistance to change. The size and direction of the relationship between trust in leadership–ability and resistance to change suggests that a one point increase in trust in leadership–ability results in a

0.27 point increase of the resistance to change score. This counter-intuitive outcome will be discussed in Chapter 5.

Conclusion as relates to the trust in leadership-integrity predictor. The specifications for the hypothesis test of the trust in leadership predictor are as follows:

H_0: The coefficient of the trust in leadership-integrity variable is equal to zero.

$$\beta_{\text{trust in leadership-integrity}} = 0$$

H_a: The coefficient of the trust in leadership-integrity variable is not equal to zero.

$$\beta_{\text{trust in leadership-integrity}} \neq 0$$

I reject the null hypotheses: $B = -0.35$, $t\ (185) = -3.86$, $p < .0005$; 95% CI (-0.52, -0.17). There is sufficient evidence to indicate that the coefficient for the trust in leadership-integrity predictor is not equal to zero. Trust in leadership-integrity is a significant predictor of resistance to change. The size and direction of the relationship between trust in leadership–integrity and resistance to change suggests that a one point increase in trust in leadership–integrity results in a 0.35 point decrease of the resistance to change score.

Conclusion as relates to the gender predictor. The specifications for the hypothesis test of the gender predictor are as follows:

H_0: The coefficient of gender variable is equal to zero.

$$B_{\text{gender}} = 0$$

H_a: The coefficient of the gender variable is not equal to zero.

$$B_{\text{gender}} \neq 0$$

I reject the null hypothesis: $B = 0.28$, $t\ (185) = 2.27$, $p = .025$; 95% CI (0.04, 0.53). There is sufficient evidence to indicate that the coefficient for the gender predictor is not equal to zero. The size and direction of the relationship between gender and resistance to change suggests that

the resistance to change score increases by 0.28 for males when compared to females, holding all other predictor variables constant.

Summary

The purpose of my study was to examine the effects of trust in leadership, frequency of change, and history of change, on an online faculty member's resistance to change. A total of 2,525 online faculty members were invited to participate in my study. During the two weeks the survey was open, 189 completed the survey, resulting in a response rate of 7%. Chapter 4 began with a description of the demographics of the participants in the study. Following the report of demographics, instrumentation and inferential analysis, variable constructs were briefly defined. The reliability of the construct with the data collected in this study was investigated with Cronbach's alpha coefficients. I found all of the constructs to be reliable. I checked assumptions for correlation and regression analyses, and all assumptions were met. Pearson's product moment correlation analyses were performed to assess the bi-variate associations between the variable constructs. The resistance to change variable was not significantly correlated with any of the other variable constructs; however, many moderate to strong correlations were found between the independent variables.

The research question was, what is the relationship between any of the independent variables of trust in leadership, frequency of change, or history of change, and the dependent variable (resistance to change) among online university faculty? Three multiple linear regression analyses were performed to address this research question. In the first regression analysis, using the indices for the independent variables as originally planned, and the demographic variable of gender, the null hypothesis was not rejected. The regression model was not significant and therefore not a good fit with the data. Using a second regression analysis, which fit the three

subsections of trust in leadership in lieu of the composite trust in leadership variable, and the variable of gender, the null hypothesis was rejected. The second regression model was significant, and three of the independent variables were significant. Trust in leadership–ability was associated with increases in the resistance to change outcome. Trust in leadership–integrity was associated with decreases in the resistance to change outcome. Gender (male) was associated with increases in the resistance to change outcome. The third regression model included only the variables found to show significant relationships in the prior model. As in the second model, trust in leadership–ability was associated with increases in the resistance to change outcome; trust in leadership–integrity was associated with decreases in the resistance to change outcome; and gender (male) was associated with increases in the resistance to change outcome.

In Chapter 5, I present and compare the quantitative results and outcomes of my study to existing research and theory. In addition, I describe the study limitations and make recommendations. Chapter 5 also includes implications for positive social change, as well as an overall study conclusion providing key takeaways for future research and practice.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of my study was to examine the relationship between the independent variables of trust in leadership, frequency of change, and history of change, and the dependent variable, resistance to change, among online faculty in higher education. An expected outcome of my research was an addition to the organizational change literature concerning how specific contextual factors can play an important role in successfully implementing change in the workplace. In Chapter 2, I presented the findings from previous research indicating that trust in leadership, frequency of change, and history of change, do have a positive correlation to resistance to change; however, a gap remains concerning how these contextual factors play a role when the employees work remotely as online faculty in higher education.

I used a cross-sectional survey for the research design. I created a 46-item questionnaire using existing instruments from Herold et al. (2008), Mayer and Davis (1999), Oreg (2003), and Rafferty and Griffin (2006). I used the online tool Qualtrics to deliver the instrument to the population. I collected the data from a sample of $N = 189$ online faculty members, all currently employed at the case study university. The raw data were analyzed using SPSS. I used a quantitative approach to analyze data to determine the associations between the independent and dependent variables. I used descriptive statistics to analyze the demographic information, and multiple linear regression to determine the relationships between the independent variables and the dependent variable.

The research question for this study was: What is the relationship between any of the independent variables (trust in leadership, frequency of change, history of change) and the dependent variable (resistance to change) among online university faculty? The null hypothesis was: There is no relationship between any of the independent variables of trust in leadership,

frequency of change, or history of change, and the dependent variable, resistance to change, among online university faculty. My analysis failed to reject the null hypothesis. There were no significant relationships between any of the three independent variables and the dependent variable. The nonsignificance of the model suggested a poor fit, so I attempted a better model fit by replacing the trust in leadership composite with the individual trust in leadership predictor variables (ability, benevolence, and integrity).

The original alternative hypothesis stated that at least one of the independent variables would show a relationship with the dependent variable, which was not true when the independent variables were analyzed as originally presented. However, the second model, where the subfactors of trust in leadership were analyzed individually rather than as a composite, did result in a significant relationship for gender (p value of .06) and two of the three subfactors (ability, integrity); therefore, there is evidence that the alternative hypothesis was true. The results showed a significant relationship between the trust in leadership subfactors (ability, integrity) and resistance to change. However, neither frequency of change or history of change had a statistically significant impact on resistance to change.

In my third model, I removed the nonsignificant variables and ran the regression using only the trust in leadership subfactors (ability, integrity), gender, and resistance to change. Consistent with the second model, the third regression resulted in a rejection of the null hypothesis. There was evidence that trust in leadership-ability, trust in leadership-integrity, and gender are significant predictors of resistance to change.

In the remaining sections of Chapter 5, I explain and interpret the Chapter 4 findings. I continue with limitations of my study, followed by recommendations for action and future research in the field of organizational change. The chapter concludes with a discussion on how

my findings can contribute to positive social change and final comments and reflection on the study.

Interpretation of Findings

Trust in Leadership

There was not a significant relationship between the composite measure of trust in leadership and resistance to change. This was an unexpected outcome, as previous studies revealed that resistance to change is a likely outcome when employees do not trust their leaders. For example, in a study investigating cynicism toward change in higher education institutions, Qian and Daniels (2008) found that trust in leadership is one of the antecedents of change-related cynicism, and that resistance will likely follow when faculty are cynical (p. 329). In another example, Oreg and Sverdlik (2011) conducted a study on ambivalence toward organizational change, and how trust in management can influence an employee's reaction toward change. Oreg and Sverdlik found that employees become more compliant (less resistant) when the change agent is perceived as trustworthy. In another study exploring trust in leadership, Ertürk (2008) examined the role of trust, participation, and openness to organizational change in public-sector organizations. One focus of the study was an examination of the role of trust in supervision as a possible influence on the employee's openness to workplace change. Ertürk found that trust in the supervisor has a positive influence on the employee's willingness to accept change.

In the analysis from my second and third regression models, I looked for a relationship between the subfactors of trust in leadership (ability, benevolence, integrity) and resistance to change. Findings from my study indicated a significant relationship between two of the trust subfactors (trust in leadership–ability and trust in leadership–integrity) and resistance to change. There was a negative relationship between leadership–integrity and resistance to change, and a

positive relationship between leadership–ability and resistance to change. I found no other studies where any or all of the same trust in leadership subfactors were examined for a direct relationship with resistance to change.

The negative relationship for trust in leadership–integrity, but not for the sub-factors of ability and benevolence, may indicate that virtual faculty rely mostly on the organizational leaders' honesty and trustworthiness, along with other elements considered essential to integrity. Frazier et al. (2009) suggested that integrity might be more relevant than the trust subfactors of ability or benevolence when significant change is taking place in the workplace. My results could also be due to the participants' lack of face-to-face contact with the supervisor and other organizational leaders. Feeling isolated could result in feelings of not having control. My findings suggest that faculty managers and other leaders should look for opportunities to strengthen perceptions of integrity through communication and other actions.

The results for trust in leadership–ability were confounding. I found a significant positive correlation between leadership-ability and resistance to change. As perceptions of ability increase, resistance to change also increases. The organizational change literature suggests that resistance to change should decrease as trust in leadership ability increases. Oreg (2006) examined the relationships of trust in management and resistance to change by measuring trust based on employees' perceived confidence in management's ability to effectively lead change. Oreg found a significant negative relationship between trust in leadership ability and resistance to change (p. 93).

My findings may be an anomaly, which would require further research to replicate or refute. While there is no practical application for the trust in leadership–

ability results, it is a possible indicator that change leadership is not in question for the case study organization.

Frequency of Change

My study did not reveal a significant relationship between frequency of change and resistance to change. This finding was unanticipated, as prior studies found that frequency was a determining factor for resistance to change. Herold et al. (2007) examined how commitment to change influences contextual factors. They found that when an organization experiences pervasive change, the commitment from individuals is negatively affected. An explanation for my finding may lie in the case study organization's culture, which includes a continuous effort to improve current processes and practices while encouraging new ideas. Supporting this explanation, Stensaker and Meyer (2012) found that employees who had experienced increased levels of change were less likely to be resistant to change. Increased exposure to change created a familiarity, which influenced the reaction to change (p. 114).

Adding another dimension to the role of frequency of change, Smollan et al. (2010) investigated the role of time associated with the emotions individuals experience during organizational change. In particular, questions addressed issues of temporal speed, timing, and frequency of change. Smollan et al. found that change is too quick when those affected perceived they had too little time to accomplish the required work or to psychologically adjust to the change. Frequency of change was a concern for many of the participants. An important outcome from the Smollan et al. study was that experience and emotions from past changes carry over into the present time.

While not specifically examined in my research, there is evidence that frequent change can have a positive influence on organizational change efforts, which may provide an

explanation for the lack of significant findings in this area of my study. Stensaker and Meyer (2012) examined how an individual's experience with organizational change influences the reaction to change. The researchers explored whether repeated exposure to change develops change capabilities or produces negative outcomes. Study data indicated that individuals who had experienced previous changes appeared more supportive and more likely to contribute to successful change implementation. Employees appeared to be more receptive to change as experience with organizational change increased. Experience caused employees to become accustomed to change and this familiarity influenced the individual reaction to change (p. 114). Experience was also positively associated with understanding the need for change. Individuals who have experienced a series of changes become accustomed to change and the implementation process.

History of Change

My study revealed that the contextual factor of history of change was not significantly related to resistance to change. These findings were not expected considering prior studies, particularly a study by Walker et al. (2007) examining the influence of content, context, and process. The researchers used the term *cynicism* as a surrogate for contextual factors. Walker et al. hypothesized that employees who are cynical about change would resist efforts to implement organizational change. Results from the study indicated a negative relationship between cynicism and change beliefs, and that change beliefs are a mediator between cynicism and commitment. Study findings also suggested that process could potentially counteract employee cynicism. Commitment to change may increase when employees have been properly prepared. Walker et al. emphasized the advantages of a carefully planned change initiative that includes awareness of prior change implementations in the organization (p. 769).

In addition, Becker (2010) explored *unlearning* during implementation of change; in particular, of prior knowledge and existing mental models, which might influence change efforts. Becker found that history of change could constrain future organizational change. In organizations with a history of failed initiatives, employees may be less likely to accept change based on history and collective memories.

The explanation I posited for failing to find a significant relationship between frequency of change and resistance to change may also apply to history of change. The case study organization experienced both a high frequency of change, and a successful history of change. When successful change is the norm in the workplace, it follows that faculty may see change as a normal aspect of their jobs, and thus may be less resistant.

Demographic Factors

My study included the collection of demographic information. Survey questions asked participants to specify gender, age, employment classification, and length of employment. There was not a significant relationship between the characteristics of age, employment classification, or length of employment, and resistance to change. My findings support those from other studies. The organizational change literature provides evidence indicating that age does not have a significant influence on an individual's resistance to change (Kunze, Boehm, & Bruch, 2013). Likewise, the number of years that an employee works for an organization does not have a significant relationship to resistance to change (Fawzy, 2012; Kunze, Boehm, & Bruch, 2013).

It is noteworthy that findings from my study indicated a significant relationship between gender and resistance to change. Males were more likely than females to be resistant to change. The study sample included 127 females, and 62 males. This ratio is similar to the case study university faculty population. In a population where there are fewer males, they are more likely

than females to be resistant to a change initiative. While the explanation for the results is not apparent, there are practical applications I discuss in the Chapter 5 recommendations section.

Theory and Conceptual Framework

Guidance for my study came from Ajzen's (1991) theory of planned behavior and Weiner's (1985) attribution theory. Chapter 1 introduced each theory, which were further explained in Chapter 2. The theory of planned behavior provides a link between the individual's beliefs and behavior. The findings in my research concerning trust in leadership's integrity indicate that an individual's attitudes or beliefs about change management will convert into behavioral actions, specifically, to a person's support or resistance to change. Attribution theory is about the individual's desire to understand why events happen. Weiner argued that without causal analysis, adaption would not be possible. When outcomes are positive, then a reinstatement of the causal network is likely. My literature review supported Weiner's theory; however, the analysis of my data refuted the theory.

My findings on the relationships between the subsection of trust in leadership–ability and trust in leadership–-integrity, and the dependent variable (resistance to change) highlight how the theory of attribution applies to organizational change. Also, my study supports Lazarus and Folkman's (1984) transactional stress model arguing that emotions play a key role in the events experienced by individuals and that emotion influences much of what we do and how it is done. Perceptions of trust related to integrity can directly affect the emotions experienced by the faculty member. As shown in my results, as the trust in leadership related to integrity increases, there is a decrease in resistance to change.

Limitations of the Study

The findings from my study highlight the relationship between contextual factors and resistance to change in the virtual workplace. The participants in this study were all faculty members at an online university. The faculty at this university faces challenges similar to those seen at other online universities; and while the results of my study are not generalizable to all institutions of higher education, they may be to those with similar environments and change experience. Specific changes made or taking place at the university may be different from other organizations. The organization's culture may also have influenced the way respondents answered the survey questions.

Correlation studies predict the behavior of one variable based on the behavior of a second variable. Any relationship is considered an association between the two variables; however, there will not necessarily be a causal relationship as associations could be caused in either direction, or there could be additional confounding variables (Simon & Goes, 2013, p. 273). I administered the survey for this study at a single point in time, which also makes any predictive relationships between variables unclear. To lessen the impact of this limitation, the survey population included faculty from five schools, each having different leadership, change conditions, and experiences.

Survey methodology provides several advantages, but also brings limitations to the study. A significant concern was response rate. Requests to participate in surveys are commonplace in the study university; however, the power analysis indicated a need for 77 participants, and a total of 189 completed the survey. Leedy and Ormond (2005) asserted that a majority of people receiving a questionnaire do not return them; therefore, faculty who did not participate in the study may have different opinions, which could have changed the study data. In addition, there was the potential for response bias if participants answered based on what they thought I wanted

to see, rather than on what they actually believe to be true. Respondents may have also seen an advantage to indicating that frequent or significant change has a negative effect on the organization, hoping that management might reduce the number or degree of organizational changes.

The administering of the survey provides anonymity, which should address any respondent concerns about compliance or questions perceived as threatening; however, the risk of manipulative responses was out of my control. The timing of the survey presented another potential limitation. Participants based perceptions on current or past experiences. Current experiences may produce a different response than similar experiences from the past due to the respondent's memory. Lastly, a potential limitation was that the study took place at the institution where I am employed, and my position makes me well known at the university. To minimize potential bias I disclosed my identity in the consent letter, and ensured potential respondents of their anonymity.

Recommendations for Future Study

The primary focus of my study was to better understand the relationship between contextual factors surrounding organizational change and the employee's level of resistance to change. The findings from my study supported the premise that there is a relationship between two components of trust in leadership (ability and integrity), gender and resistance to change; but that there is no relationship between frequency of change or history of change on resistance to change among online university faculty. I present several recommendations for further research based on my findings and takeaways from the Chapter 2 literature review.

One suggestion for future research is to conduct a qualitative study employing interviews with faculty members across different schools within the university. My study did not show a

significant correlation between history of change and resistance to change. This could be a result of positive change experiences; however, a qualitative study could reveal attitudes and perceptions not captured by a survey, which could aid in better understanding the environment and culture behind my findings. To broaden the scope of this study the case study organization could replicate my study with other units within the organization, for example, advisors or the university's large curriculum staff. Another recommendation for future research is to replicate my study with a different university or group of higher education institutions to validate this study. A similar possibility would be to examine any differences if the same study took place with campus based faculty rather than online faculty.

In my study, an expected outcome was to see a significant positive correlation between frequency of change and resistance to change. The results did not indicate such a relationship, which potentially aligns with the findings of Stensaker and Meyer (2012) where repeated exposure to change resulted in less resistance to change. There is an opportunity for future research by focusing on the positive effects of frequent change within the same population used in my study.

Implications

Potential for Positive Social Change

My study focused on determining what, if any significant impact exists between the independent variables of trust in leadership, frequency of change, and history of change, and the dependent variable (resistance to change). Despite the limitations in my study, my findings can have positive implications for faculty, higher education managers, and other institutions with remote employees. At the time of my study, no disruptive change was in progress; however, the case study organization had experienced many significant changes in recent years. Other

institutions with similar change experiences can be better prepared to apply the interpretations of the research to strategies for leading faculty-related change in the organization.

Gaining knowledge on how the context of change, and the gender of those facing change can impact resistance to change can aid in putting new and better communication plans into practice. Understanding how trust in leadership and gender can influence the level of resistance to change can help determine leadership strategy during times of change and times of stability. The outcomes of my research can affect how faculty managers and change agents in higher education view the context of change in the organization. Institutions can benefit from a greater understanding of the effects of frequency of change, history of change, and trust in leadership on the individual. Previous research has highlighted trust in leadership as an important antecedent of successful organizational change; however, little is known about how virtual employees and specifically, faculty in higher education are affected. The research available on the impact of an organization's history of change, or how often change takes place, on resistance to change is very limited. In addition, my findings that males were more resistant to change than females is noteworthy from a statistical perspective and as a consideration for change management planning. My study helps to fill the gap in the literature, and provides information valuable for making practical change management decisions.

Recommendations for Practice

My study addressed the possible relationships between trust in leadership, frequency of change, and history of change on resistance to change among virtual faculty in higher education. This population has received limited attention, and particularly in the area of organizational change. My study revealed that trust in leadership—ability, trust in leadership–integrity, and gender (male) in higher education is significantly associated with the dependent variable

(resistance to change) among virtual faculty. As a result, there are five recommendations for action.

First, results from this study indicated that trust in leadership–integrity can have an impact on resistance to change. This suggests that higher education administrators should pay attention to the level of trust in the organization, and specifically to trust in leadership associated with integrity. Leaders can nurture trust by using the appropriate management practices; for example, management interventions such as programs fostering workplace ethics, improved dissemination of information, and employee support on the employee's trust in the organization and its leadership. In addition, Ertürk posited that organizations wishing to build trust from their employees should focus on implementing human resource practices that encourage open and honest communication (p. 477).

Second, my results for integrity related to trust in leadership demonstrate that virtual faculty who perceive that top management abides by a set of principles the faculty member finds acceptable, are less resistant to change. By encouraging consistent actions and behaviors; following up on commitments to employees; and fostering an atmosphere where employees feel they are dealt with fairly; organizations can look forward to less resistance to change.

Third, because resistance to change is so widely considered as a contributor to the failure of change, findings from this study could be published in discipline or trade journals. The results could also be disseminated through publication of this dissertation. I will also make it available to fellow employees through presentations.

Fourth, results from my study indicated that males are more resistant than females to change. Administrators at the case study university can use this information in change management planning and communication. To reduce resistance, faculty managers should

consider including males in the early stages of planning where they can have a voice in shaping the communications and buy in from other faculty. Males who exhibit a positive reaction to change should be considered for change initiative champion roles, to set an example for others. In addition, efforts should be made to avoid all-male working groups in a change initiative. Including both males and females provides a greater likelihood of support for change.

Finally, I recommend additional research to examine why I found a positive relationship between leadership-ability and resistance to change. This unexplained finding may be an anomaly; however, it leaves an unanswered question for the case study university. While the significance level was low, it was significant and is noteworthy from both a statistical and practical perspective.

The analysis from this study will assist higher education administrators and faculty managers in addressing the problems associated with organizational change. In particular, people in these positions should understand the impact context and gender has on change initiatives. Such information allows for proactive actions, which may better position the organization for change, and especially change that is brought about suddenly, rather than a controlled planned change.

Conclusions

The purpose of this quantitative study was to gain insight into how context can affect one of the most commonly believed causes for organizational change failure: resistance to change. Context of change was shown in previous research to be a determining factor in the success or failure of organizational change efforts. My research provides awareness and new understanding of how potential contributors to change failure interact within a virtual faculty workforce. Guided by the theories of planned behavior, attribution, and the transactional stress model

framework, I examined the impact of the contextual variables of trust in leadership, frequency of change, and history of change on virtual faculty resistance to change.

I investigated one research question and corresponding using a series of three regression models. When considering trust in leadership subfactors (ability, benevolence, integrity), trust in leadership's ability and integrity were significantly related to the virtual faculty member's resistance to change. I also found that gender was associated with increases in the resistance to change outcome. The organization's frequency of change and history of change were not significantly related to resistance to change.

Many factors may contribute to an employee's resistance to change. As this study is the first to examine context of change within virtual faculty, the results should be interpreted with caution. Further research in needed to validate these findings. Organizational change can take a toll on employee attitudes, emotions, and subordinate/manager interactions. Gaining a greater understanding of how contextual factors impact the individual can aid in reducing resistance to change, while increasing the success of change efforts.

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Appendix A: Permission to Use Surveys

Change Survey: Rafferty and Griffin (2006)

Nov 28

David Starnes

to a.rafferty

Dear Prof. Rafferty,

I am a doctoral student at Walden University working on my proposal. The study is tentatively titled, "Exploring the Influence of Contextual Factors and Trust in Leadership on Resistance to Organizational Change".

Please let me know if you would permit the use of your 2006 change survey questions in my research study.

Sincerely,

David Starnes
E-mail:

Alannah Rafferty Nov 30

to me

Hi David

Yes, that is fine. Best of luck with your research.

Alannah

Ph:
E-mail:

Change Leadership Survey: Herold, Fedor, Caldwell, and Liu (2008)

David Starnes Nov 28

to david.herold

Dear Dr. Herold,

I am a doctoral student at Walden University working on my proposal. The study is tentatively titled, “Exploring the Influence of Contextual Factors and Trust in Leadership on Resistance to Organizational Change”.

Please let me know if you would permit the use of your 2008 Change Leadership questions in my research study.

Sincerely,

David Starnes
E-mail:

Herold, David M Nov 28

to me

David,
If you have access to the items, feel free to use them. I have been retired for quite a few years and no longer have access to any of my own research materials.
Best of luck,
David Herold

Measures of Trust & Trustworthiness: Mayer and Davis (1999)

Nov 28

David Starnes

to rcmayer

Dear Dr. Mayer,

I am a doctoral student at Walden University working on my proposal. The study is tentatively titled, “Exploring the Influence of Contextual Factors and Trust in Leadership on Resistance to Organizational Change”.

Please let me know if you would permit the use of your 1999 Measures of Trust and Trustworthiness questions in my research study.

Sincerely,

David Starnes
E-mail:

Roger Mayer Nov 28

to me

Hello David,
Your topic is very timely & important. The measures are now copyrighted by the APA, they allow use of the measures for research provided they are cited appropriately.
Good luck with your work,
Roger

Title: The effect of the performance appraisal system on trust for management: A field quasi-experiment.
Author: Mayer, Roger C.; Davis, James H.
Publication: Journal of Applied Psychology
Publisher: American Psychological Association
Date: Feb 1, 1999

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Resistance to Change Survey: Oreg (2003)

Nov 28

David Starnes

to oreg

Dear Prof. Oreg,

I am a doctoral student at Walden University working on my proposal. The study is tentatively titled, “Exploring the Influence of Contextual Factors and Trust in Leadership on Resistance to Organizational Change”.

Please let me know if you would permit the use of your Resistance to Change instrument in my research study.

Sincerely,

David Starnes

E-mail:

Shaul Oreg Nov 28

to me

Please feel free to use it for your research.

Appendix B: Case Processing Results

Tables B1–B4 and Figures B1—B28 in this appendix represent the case processing results for this study.

Table B1

Case Summary

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Resistance score	189	100.0%	0	0.0%	189	100.0%
Trust ability score	189	100.0%	0	0.0%	189	100.0%
Trust benevolence score	189	100.0%	0	0.0%	189	100.0%
Trust integrity score	189	100.0%	0	0.0%	189	100.0%
Frequency of change score	189	100.0%	0	0.0%	189	100.0%
History of change score	189	100.0%	0	0.0%	189	100.0%
Trust in leadership score	189	100.0%	0	0.0%	189	100.0%

Table B2

Case Descriptives

Descriptives				
			Statistic	Std. error
Resistance score	Mean		3.1392	.06102
	95% Confidence interval for mean	Lower bound	3.0188	
		Upper bound	3.2596	
	5% Trimmed mean		3.1385	
	Median		3.0769	
	Variance		.704	
	Std. deviation		.83893	
	Minimum		1.23	
	Maximum		5.31	
	Range		4.08	
	Interquartile range		1.31	
	Skewness		.058	.177
	Kurtosis		-.558	.352
Trust ability score	Mean		4.9832	.10392
	95% Confidence interval for mean	Lower bound	4.7783	
		Upper bound	5.1882	
	5% Trimmed mean		5.0688	
	Median		5.1667	
	Variance		2.041	
	Std. deviation		1.42862	

table continues

			Statistic	Std. error
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile range		2.00	
	Skewness		-.769	.177
	Kurtosis		.147	.352
Trust benevolence score	Mean		4.3933	.12061
	95% Confidence interval for mean	Lower bound	4.1554	
		Upper bound	4.6312	
	5% Trimmed mean		4.4342	
	Median		4.6667	
	Variance		2.749	
	Std. deviation		1.65811	
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile range		2.67	
	Skewness		-.426	.177
	Kurtosis		-.837	.352
Trust integrity score	Mean		4.8104	.09473
	95% Confidence interval for mean	Lower bound	4.6235	
		Upper bound	4.9973	
	5% Trimmed mean		4.8543	
	Median		5.000	
	Variance		1.696	
	Std. deviation		1.30230	
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile range		2.00	
	Skewness		-.524	.177
	Kurtosis		-.295	.352
Frequency of change score	Mean		4.3810	.09289
	95% Confidence interval for mean	Lower bound	4.1977	
		Upper bound	4.5642	
	5% Trimmed mean		4.3832	
	Median		4.3333	
	Variance		1.631	
	Std. deviation		1.27699	
	Minimum		1.67	
	Maximum		7.00	
	Range		5.33	
	Interquartile range		1.33	
	Skewness		-.109	.177
	Kurtosis		-.506	.352
History of change score	Mean		4.9767	.09865
	95% Confidence interval for mean	Lower bound	4.7821	
		Upper bound	5.1713	
	5% Trimmed mean		5.0427	
	Median		5.1000	
	Variance		1.839	
	Std. deviation		1.35619	

table continues

			Statistic	Std. error
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile range		2.00	
	Skewness		-.623	.177
	Kurtosis		-.070	.352
Trust in leadership score	Mean		4.7290	.10046
	95% Confidence interval for mean	Lower bound	4.5308	
		Upper bound	4.9272	
	5% Trimmed mean		4.7787	
	Median		5.0556	
	Variance		1.908	
	Std. deviation		1.38114	
	Minimum		1.17	
	Maximum		7.00	
	Range		5.83	
	Interquartile range		1.97	
	Skewness		-.549	.177
	Kurtosis		-.446	.352

Table B3

Case Extreme Values

		Extreme values		
			Case number	Value
Resistance score	Highest	1	181	5.31
		2	70	4.92
		3	80	4.92
		4	91	4.92
		5	51	4.62[a]
	Lowest	1	159	1.23
		2	142	1.23
		3	123	1.23
		4	42	1.38
		5	172	1.54
Trust ability score	Highest	1	3	7.00
		2	7	7.00
		3	12	7.00
		4	25	7.00
		5	32	7.00[b]
	Lowest	1	142	1.00
		2	130	1.00
		3	84	1.17
		4	41	1.17
		5	154	1.33
Trust benevolence score	Highest	1	3	7.00
		2	25	7.00
		3	32	7.00
		4	90	7.00
		5	127	7.00[b]

table continues

			Case number	Value
		1	154	1.00
		2	145	1.00
		3	96	1.00
		4	84	1.00
		5	41	1.00[c]
Trust integrity score	Highest	1	3	7.00
		2	12	7.00
		3	143	7.00
		4	162	7.00
		5	178	7.00
	Lowest	1	145	1.00
		2	174	1.83
		3	84	1.83
		4	16	1.83
		5	158	2.00[d]
Frequency of change score	Highest	1	26	7.00
		2	154	7.00
		3	174	7.00
		4	182	7.00
		5	34	6.67[e]
	Lowest	1	47	1.67
		2	150	2.00
		3	124	2.00
		4	118	2.00
		5	115	2.00[d]
History of change score	Highest	1	3	7.00
		2	29	7.00
		3	41	7.00
		4	43	7.00
		5	51	7.00[b]
	Lowest	1	54	1.00
		2	45	1.20
		3	103	1.30
		4	16	1.60
		5	84	1.80
Trust in leadership score	Highest	1	3	7.00
		2	143	7.00
		3	25	6.94
		4	178	6.94
		5	127	6.89
	Lowest	1	145	1.17
		2	84	1.33
		3	41	1.39
		4	154	1.50
		5	16	1.61

a. Only a partial list of cases with the value 4.62 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 7.00 are shown in the table of upper extremes.

c. Only a partial list of cases with the value 1.00 are shown in the table of lower extremes.

d. Only a partial list of cases with the value 2.00 are shown in the table of lower extremes.

e. Only a partial list of cases with the value 6.67 are shown in the table of upper extremes.

Table B4

Case Tests of Normality

Tests of normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Resistance score	.055	189	.200*	.990	189	.210
Trust ability score	.124	189	.000	.938	189	.000
Trust benevolence score	.138	189	.000	.946	189	.000
Trust integrity score	.092	189	.000	.965	189	.000
Frequency of change score	.083	189	.000	.974	189	.001
History of change score	.100	189	.000	.959	189	.000
Trust in leadership score	.096	189	.000	.961	189	.000

* This is a lower bound of the true significance.

a. Lilliefors significance correction

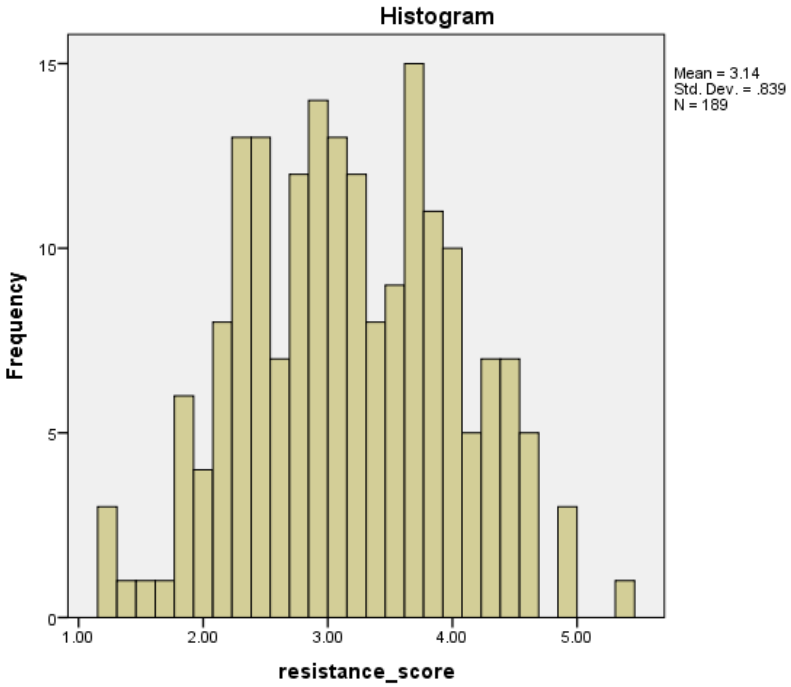

Figure B1. Resistance score histogram.

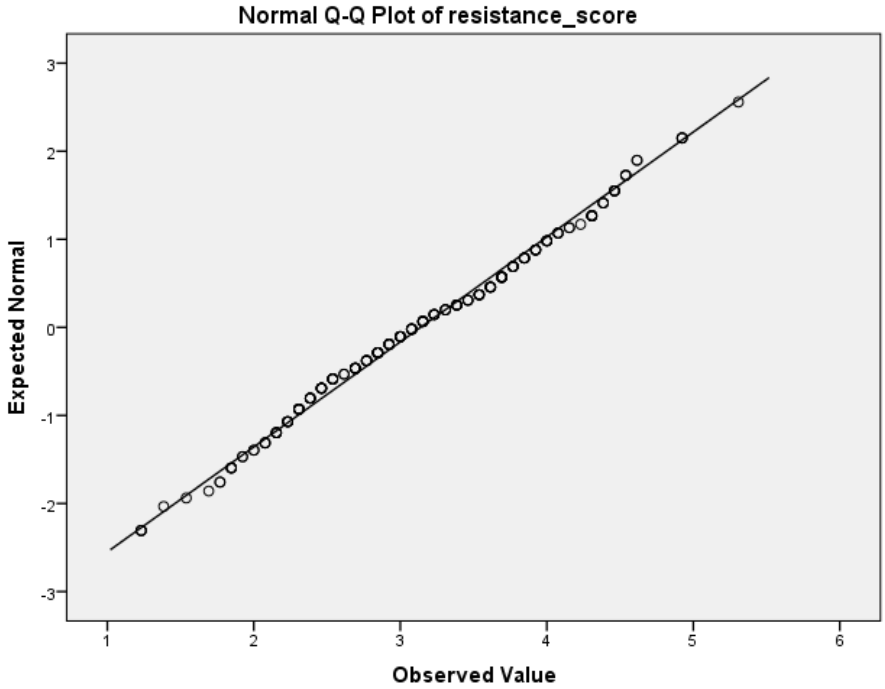

Figure B2. Normal Q-Q plot of resistance score.

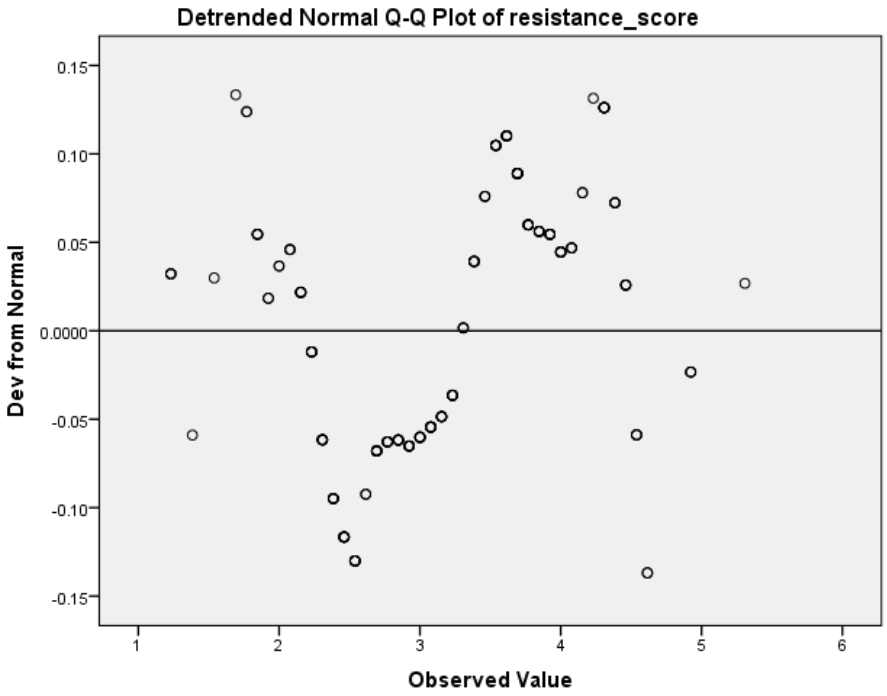

Figure B3. Detrended normal Q-Q plot of resistance score.

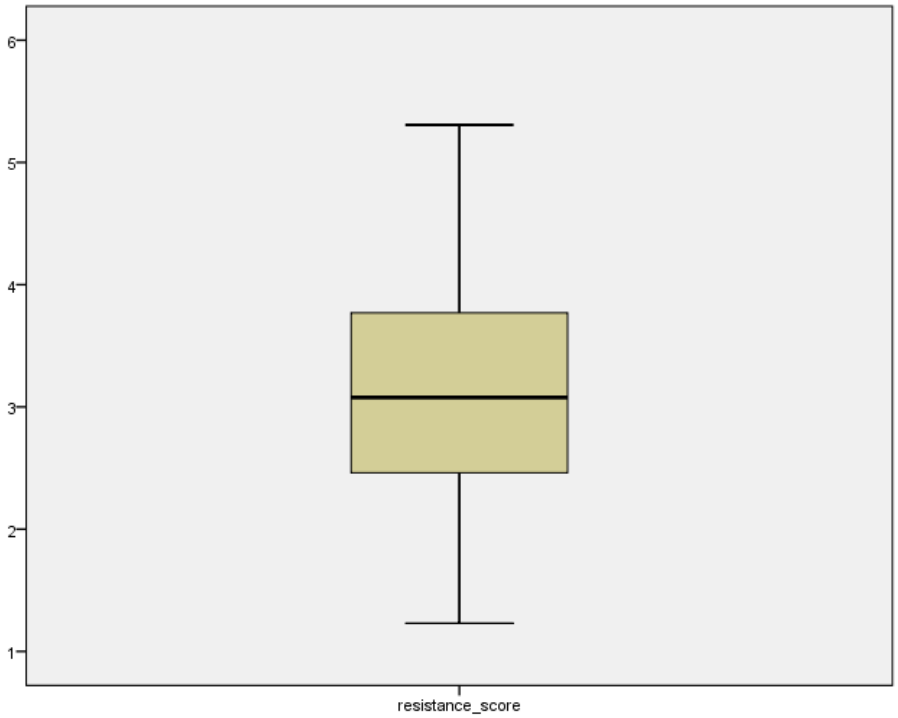

Figure B4. Resistance score boxplot.

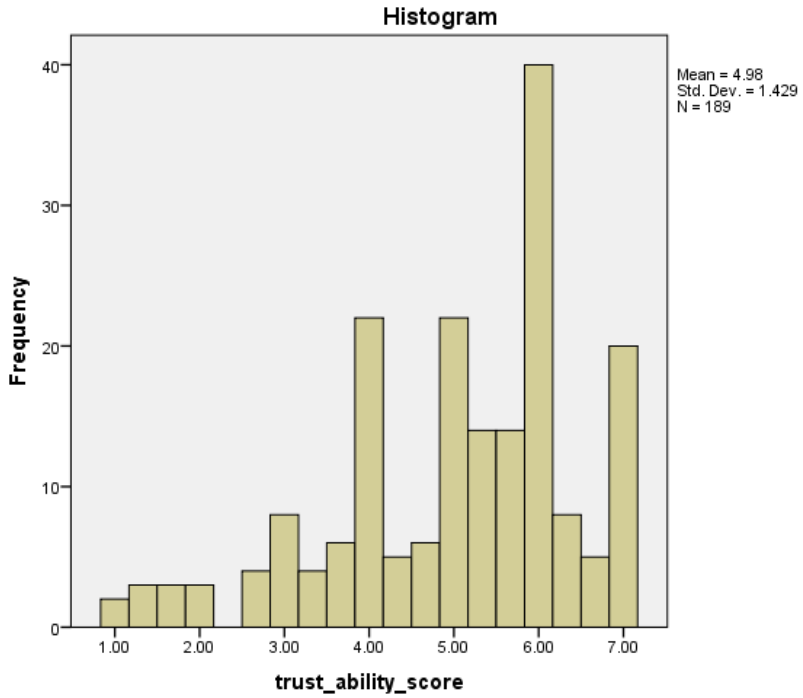

Figure B5. Trust—ability score histogram.

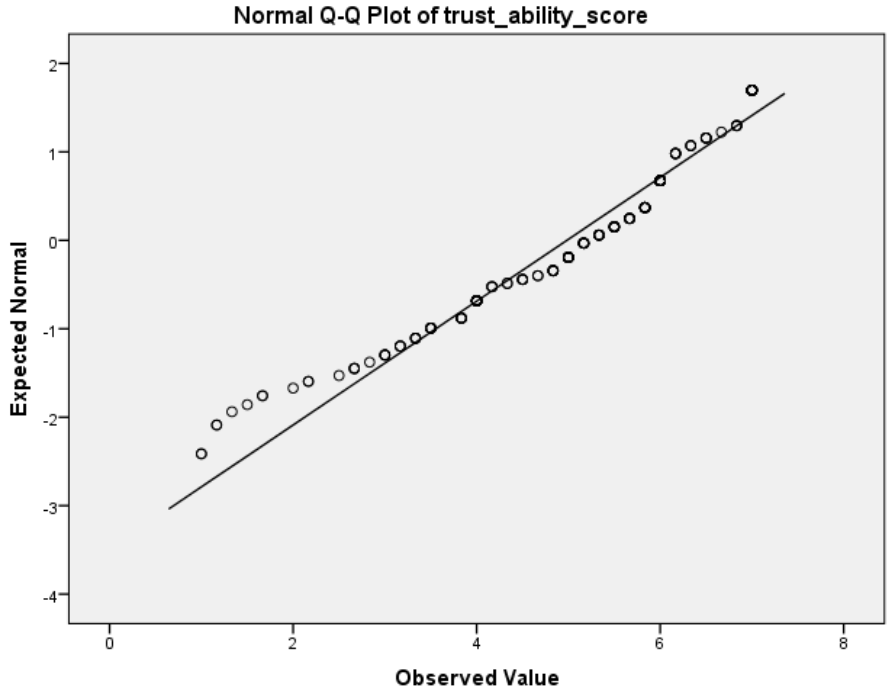

Figure B6. Normal Q-Q plot of trust—ability score.

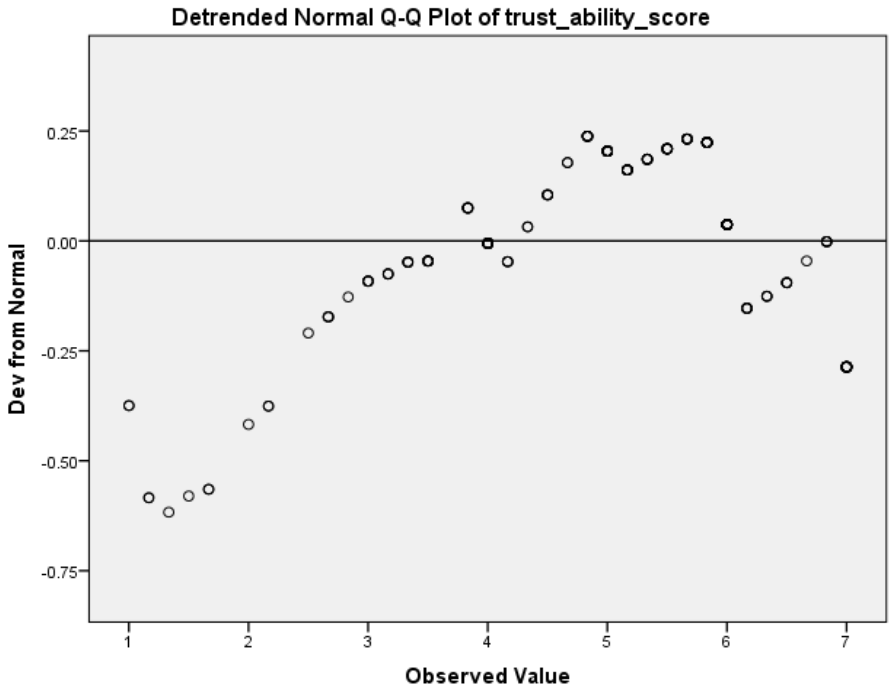

Figure B7. Detrended normal Q-Q plot of trust—ability score.

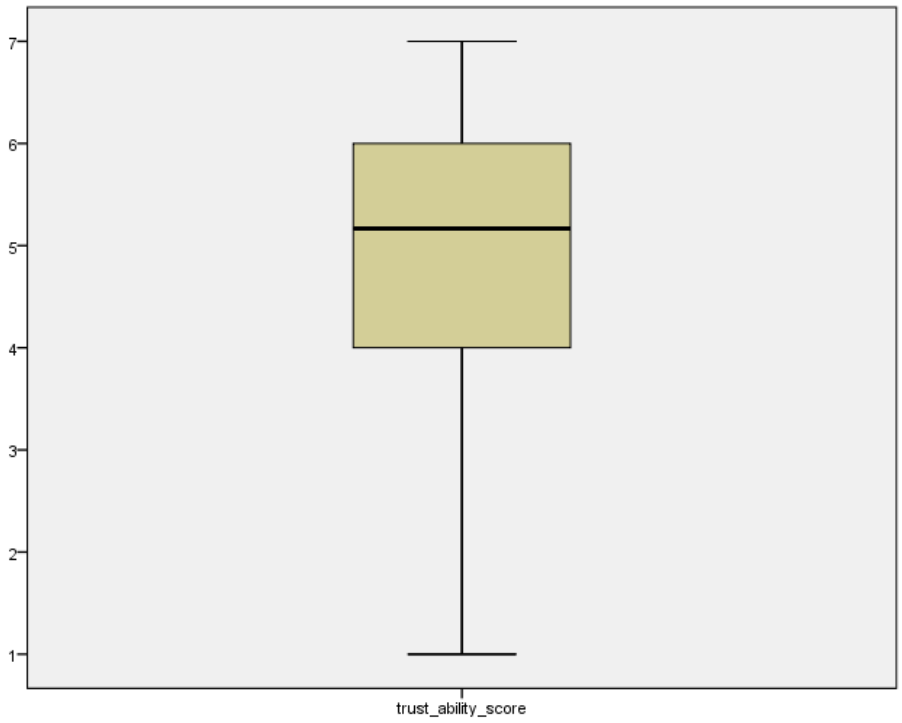

Figure B8. Trust—ability score boxplot.

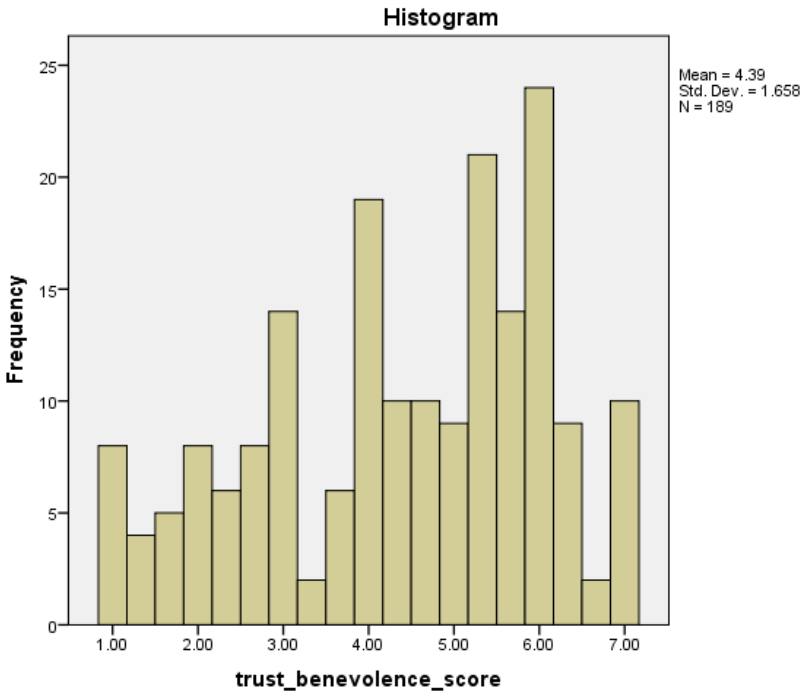

Figure B9. Trust—benevolence score histogram.

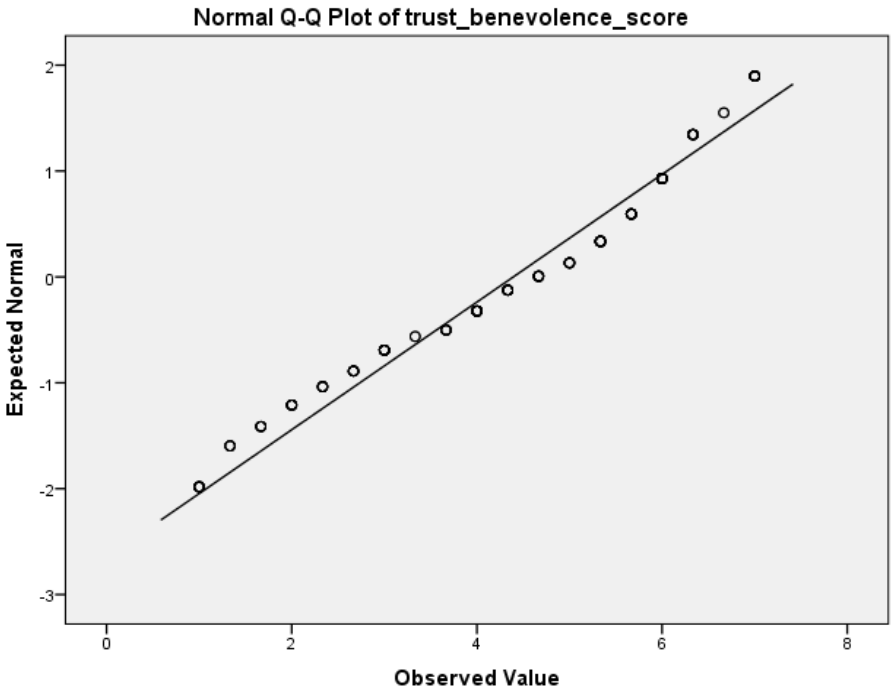

Figure B10. Normal Q-Q plot of trust—benevolence score.

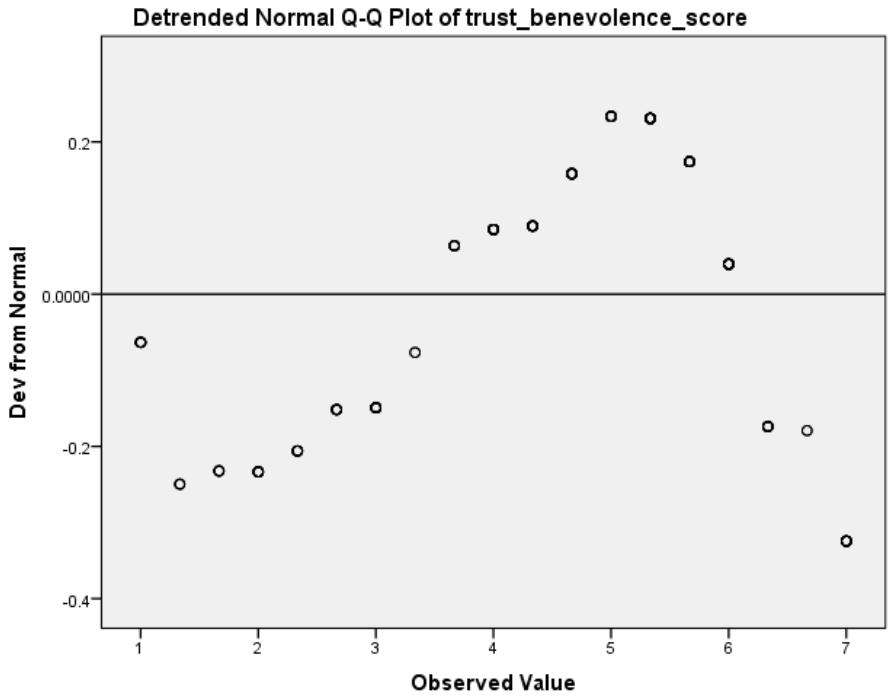

Figure B11. Detrended normal Q-Q plot of trust—benevolence score.

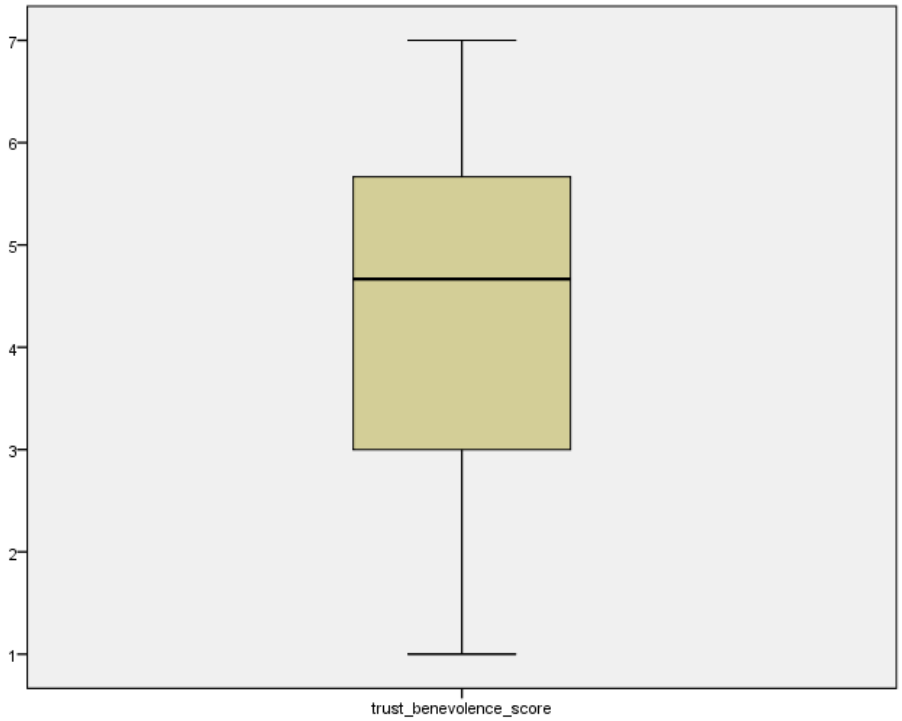

Figure B12. Trust—benevolence score boxplot.

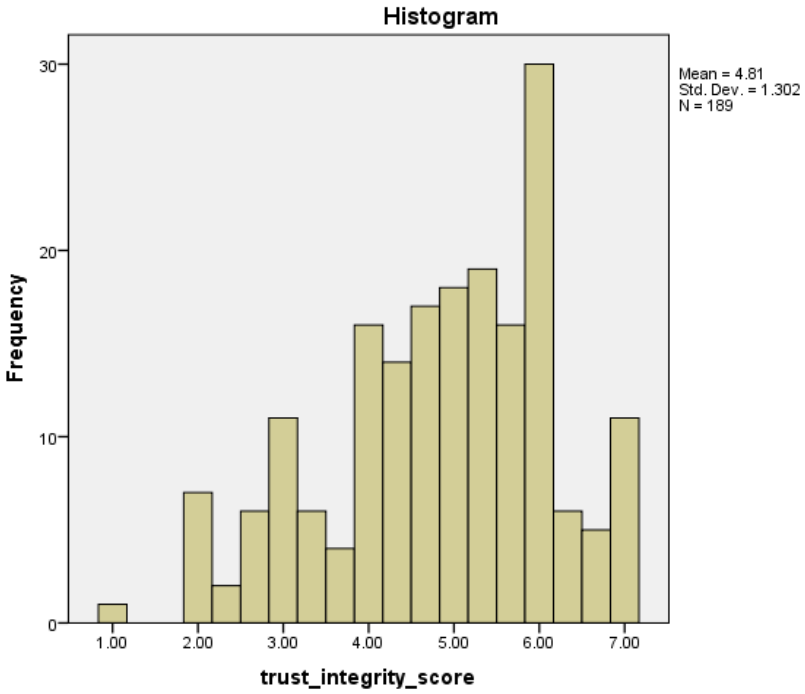

Figure B13. Trust—integrity score histogram.

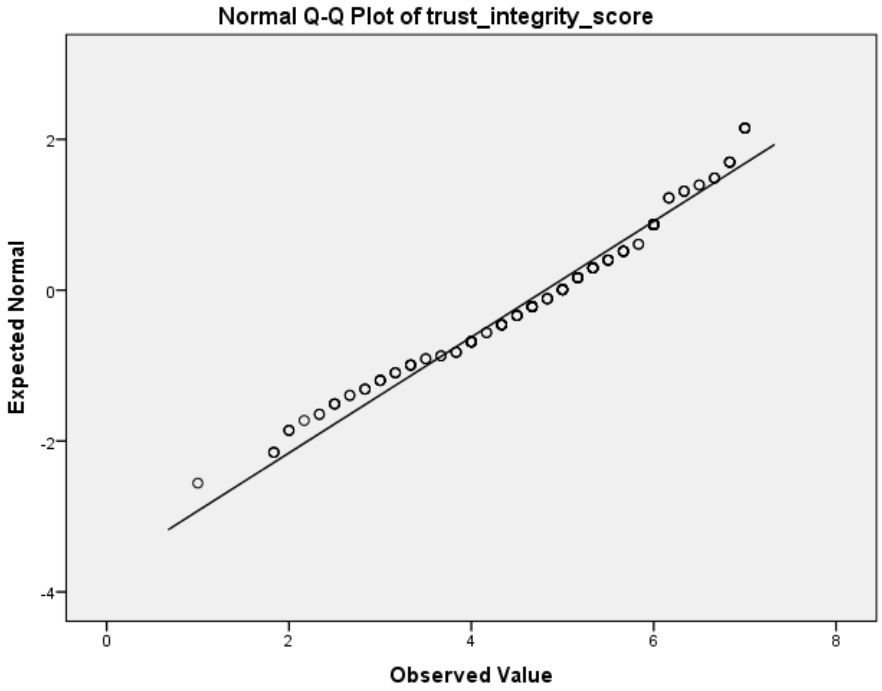

Figure B14. Normal Q-Q plot of trust—integrity score.

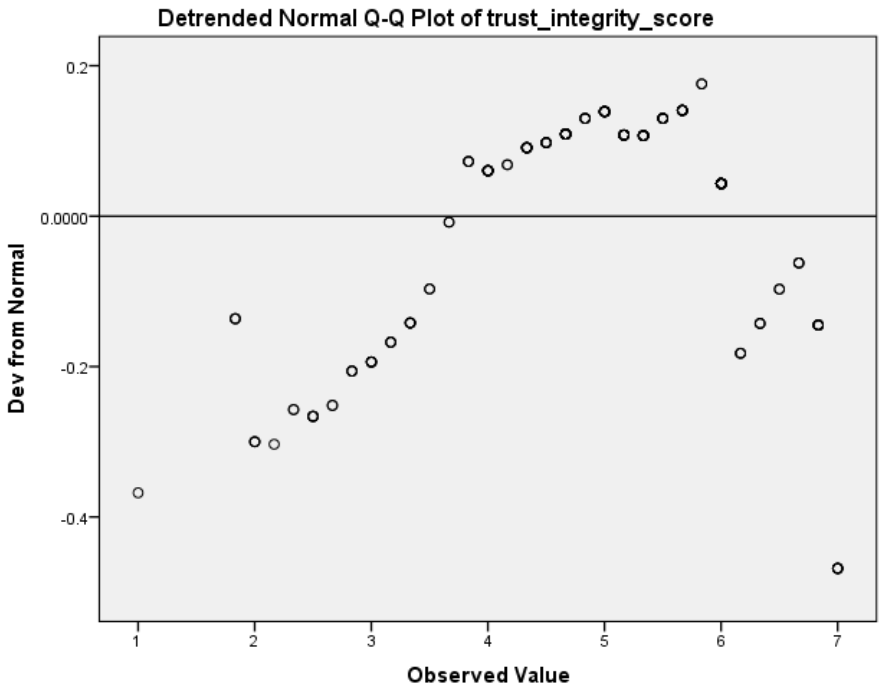

Figure B15. Detrended normal Q-Q plot of trust—integrity score.

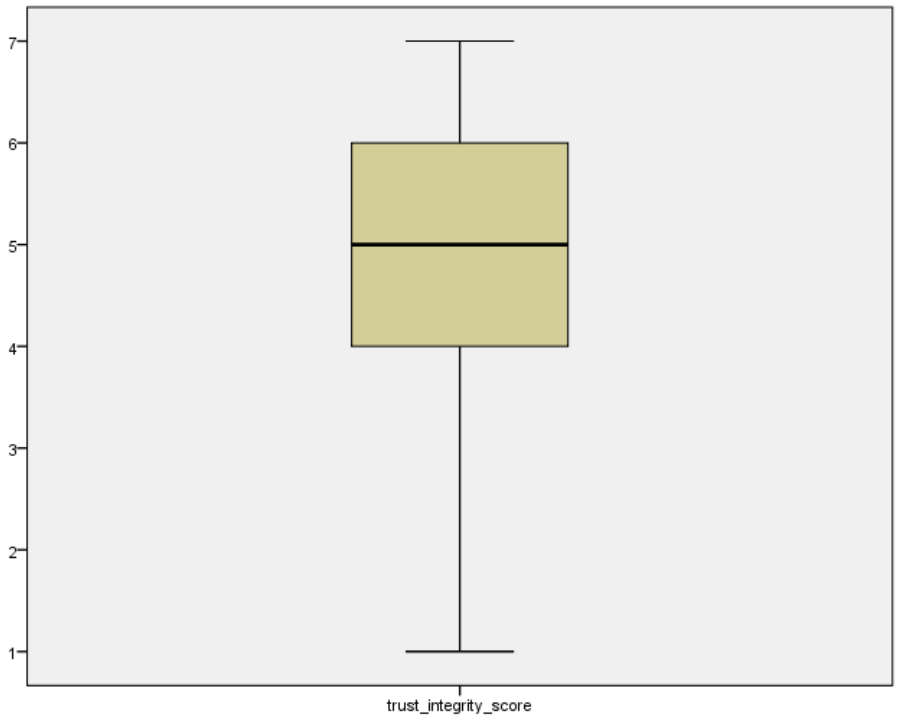

Figure B16. Trust—integrity score boxplot.

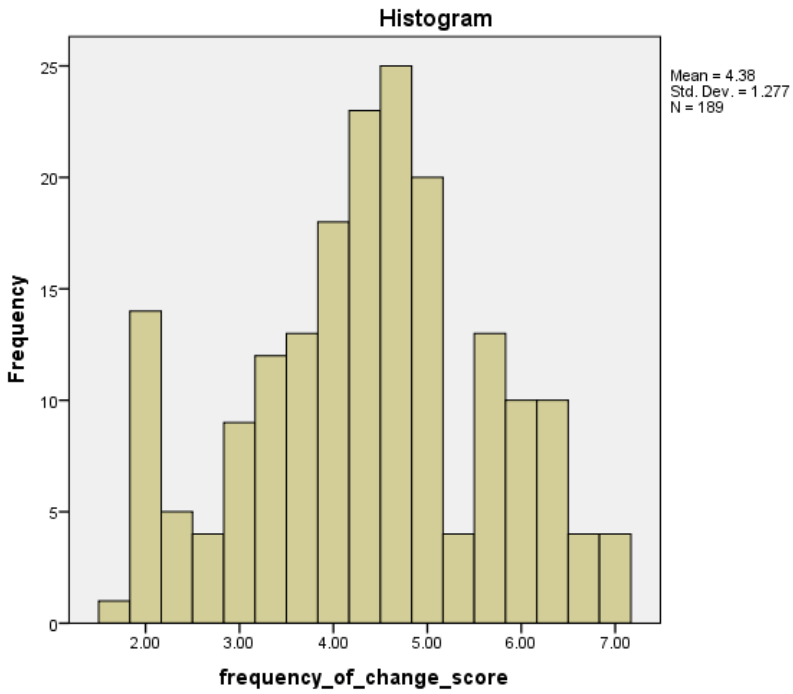

Figure B17. Frequency of change score histogram.

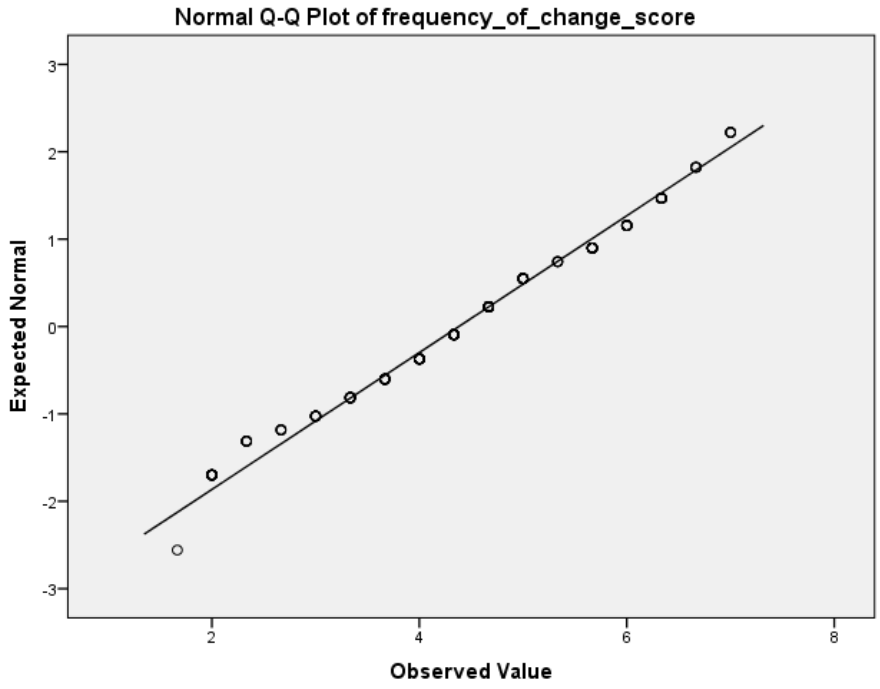

Figure B18. Normal Q-Q plot of frequency of change score.

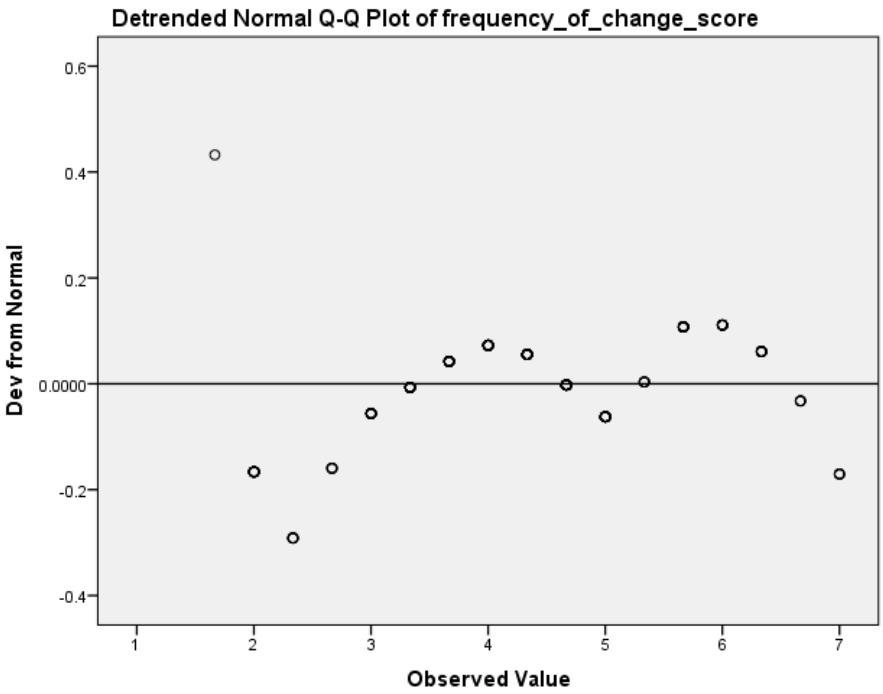

Figure B19. Detrended normal Q-Q plot of frequency of change score.

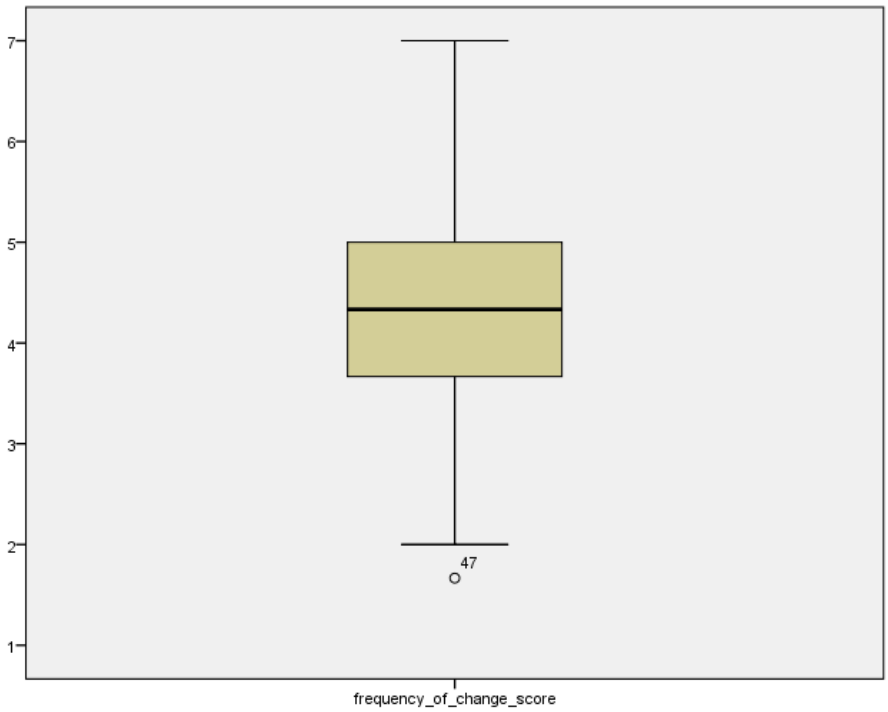

Figure B20. Frequency of change score boxplot.

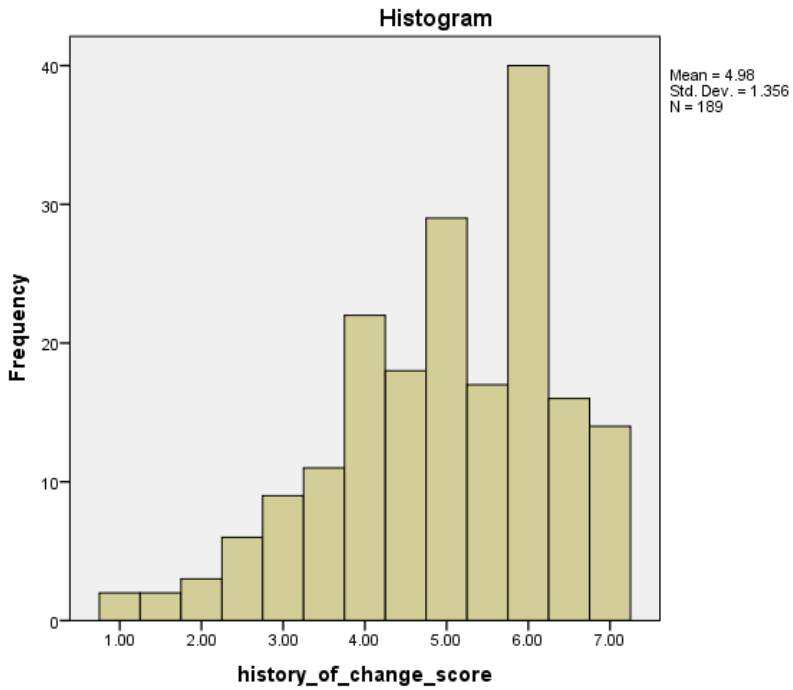

Figure B21. History of change histogram.

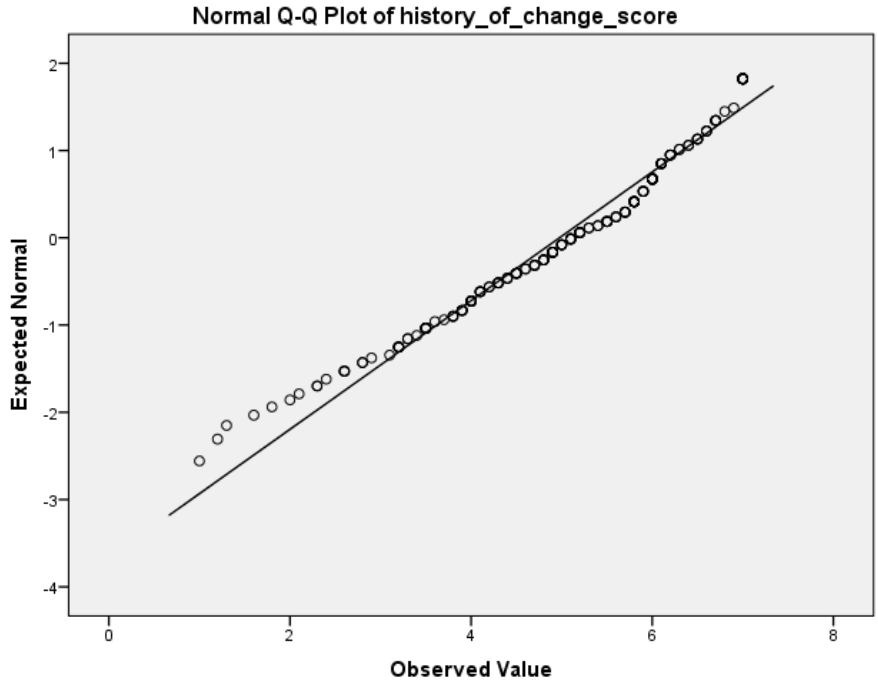

Figure B22. Normal Q-Q plot of history of change score.

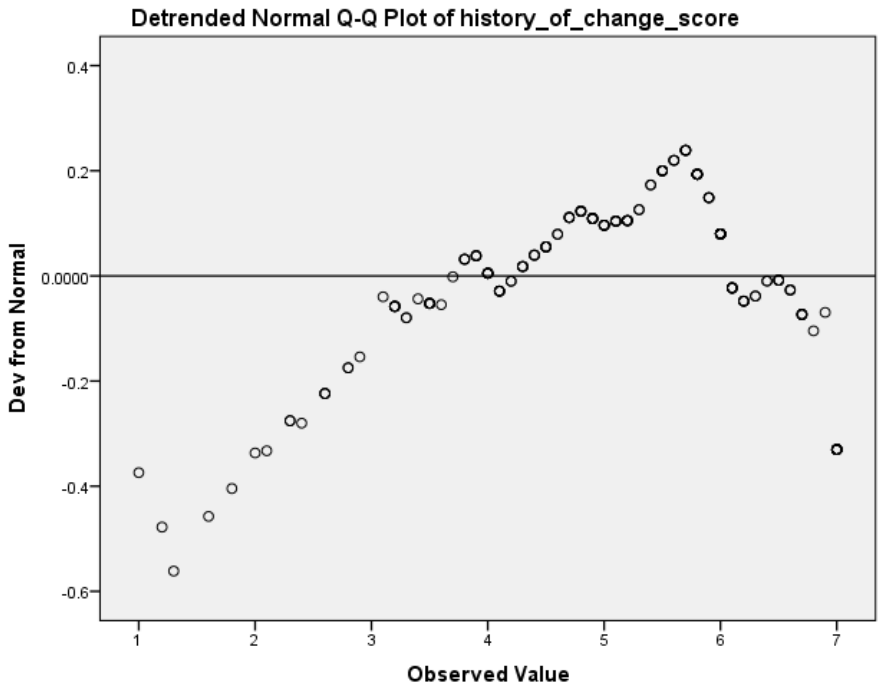

Figure B23. Detrended normal Q-Q plot of history of change score.

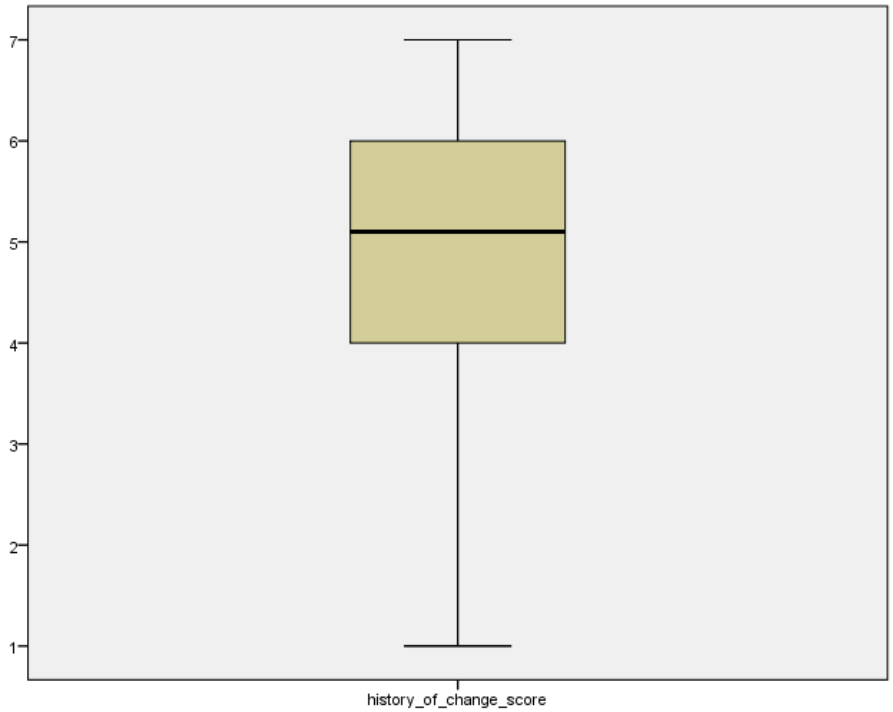

Figure B24. History of change score boxplot.

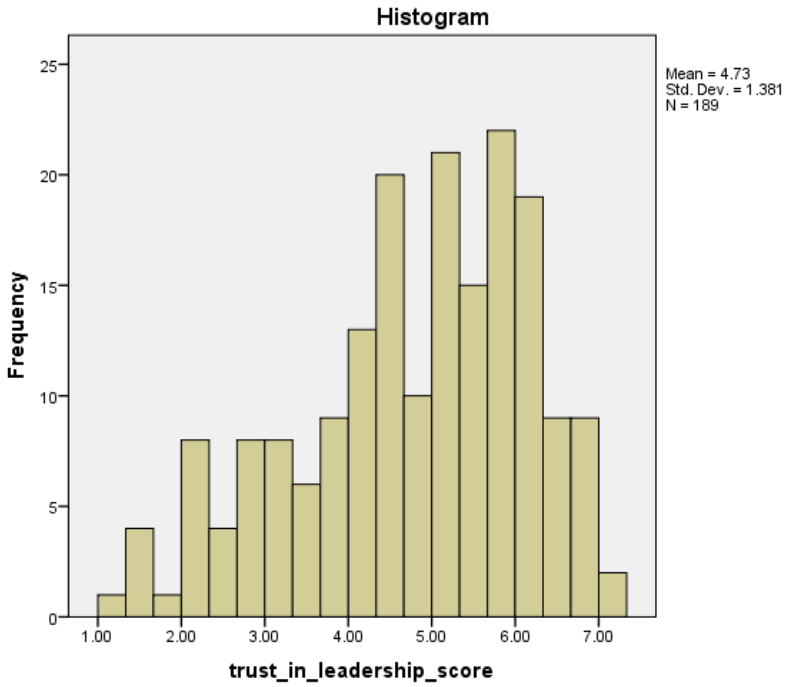

Figure B25. Trust in leadership score histogram.

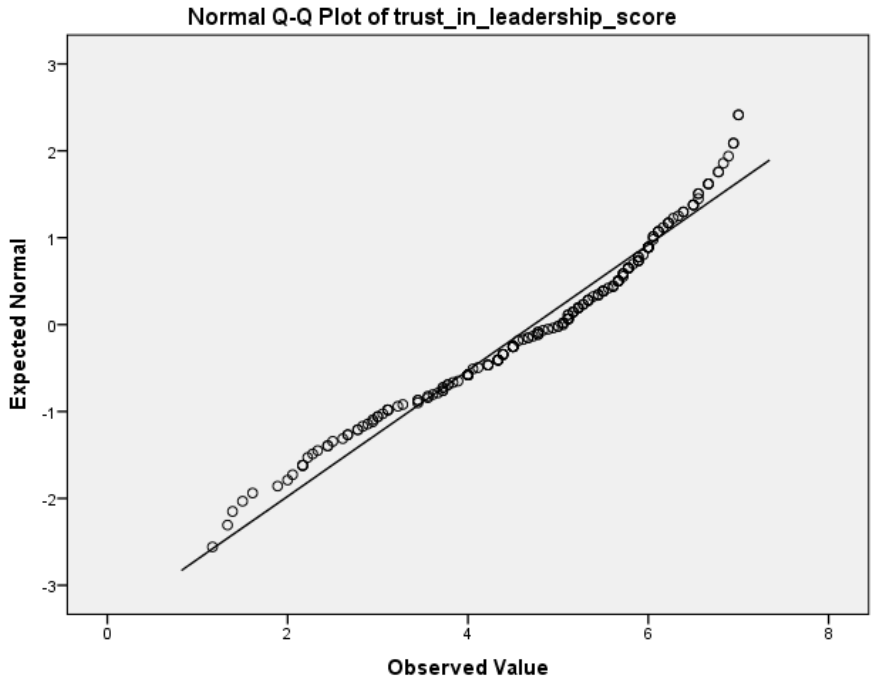

Figure B26. Normal Q-Q plot of trust in leadership score

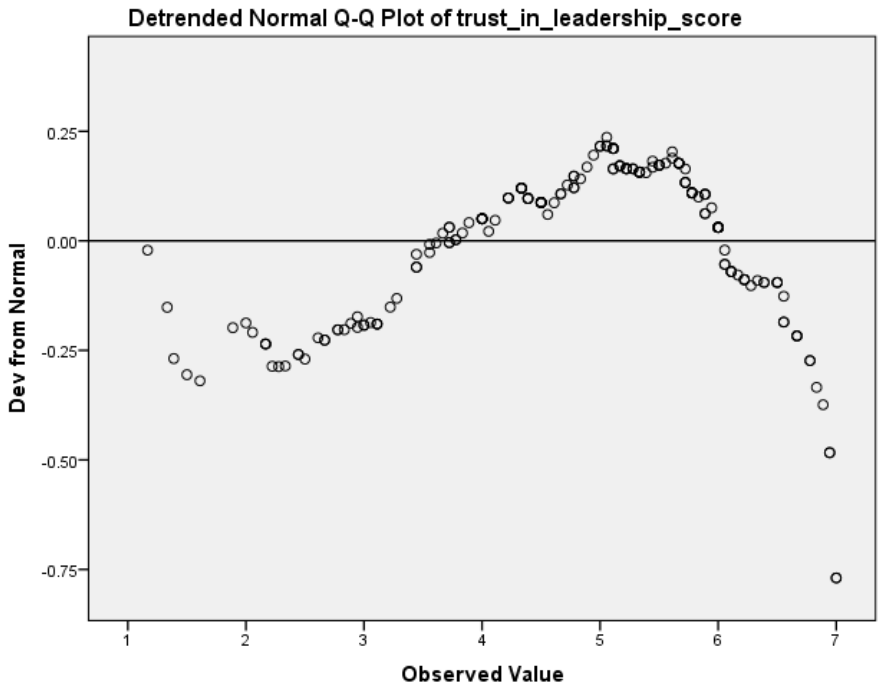

Figure B27. Detrended normal Q-Q plot of trust in leadership score.

Figure B28. Trust in leadership score boxplot.

Appendix C: SPSS Regression Output

Tables C1—C8 and Figures C1—C2 in this appendix represent regression model 1 results for this study. Tables C9–C16 and Figures C3—C4 in this appendix represent regression model 2 results for this study. Tables C17—C24 and Figures C5—C6 in this appendix represent regression model 3 results for this study.

Table C1

Regression Model 1 Descriptive Statistics

Descriptive statistics			
	Mean	Std. deviation	N
Resistance to change	3.1392	.83893	189
Trust in leadership	4.7290	1.38114	189
Frequency of change	4.3810	1.27699	189
History of change	4.9767	1.35619	189
Gender coded	.3280	.47075	189

Table C2

Regression Model 1 Correlations

Correlations						
		Resistance score	Trust in leadership score	Frequency of change score	History of change score	Gender score
Pearson Correlation	Resistance score	1.000	-.093	.053	-.004	.143
	Trust in leadership score	-.093	1.000	-.370	.642	-.033
	Frequency of change score	.053	-.370	1.000	-.313	.033
	History of change score	-.004	.642	-.313	1.000	.004
	Gender score	.143	-.033	.033	.004	1.000
Sig. (1-tailed)	Resistance score		.102	.236	.477	.025
	Trust in leadership score	.102		.000	.000	.328
	Frequency of change score	.236	.000		.000	.327
	History of change score	.477	.000	.000		.480
	Gender score	.025	.328	.327	.480	
N	Resistance score	189	189	189	189	189
	Trust in leadership score	189	189	189	189	189
	Frequency of change score	189	189	189	189	189
	History of change score	189	189	189	189	189
	Gender score	189	189	189	189	189

Table C3

Regression Model 1 Correlations Variables Entered/Removed

Variables entered/removed[a]			
Model	Variables entered	Variables removed	Method
1	History of change score Frequency of change score Trust in leadership score Gender score		Enter

a. Dependent variable: resistance to change.

Table C4

Regression Model 1 Model Summary

Model Summary[b]					
Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
1	.183[a]	.033	.012	.83376	2.112

a. Predictors: (Constant), history of change, frequency of change, trust in leadership, gender
b. Dependent variable: resistance to change

Table C5

Regression Model 1 ANOVA

ANOVA						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	4.407	4	1.102	1.585	.180[b]
	Residual	127.907	184	.695		
	Total	132.314	188			

a. Dependent variable: resistance to change

b. Predictors: (Constant), history of change, frequency of change, trust in leadership, gender

Table C6

Regression Model 1 Coefficients

Coefficients[a]												
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B		Correlations			
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
	Constant	3.098	.407		7.616	.000	2.295	3.900					
	Trust in leadership	-.084	.059	-.138	-1.414	.159	-.200	.033	-.093	-.104	-.103	.556	1.800
	Frequency of change	.017	.052	.026	.330	.742	-.085	.119	.053	.024	.024	.853	1.172
	History of change	.057	.059	.092	.963	.337	-.059	.173	-.004	.071	.070	.581	1.722
	Gender	.244	.129	.137	1.889	.060	-.011	.500	.143	.138	.137	.997	1.003

a. Dependent variable: resistance to change

Table C7

Regression Model 1 Collinearity Diagnostics

Collinearity Diagnostics[a]								
Model	Dimension	Eigenvalue	Condition index	Variance proportions				
				(Constant)	Trust in leadership score	Frequency of change score	History of change score	Gender score
1	1	4.214	1.000	.00	.00	.00	.00	.02
	2	.615	2.617	.00	.00	.00	.00	.97
	3	.129	5.726	.00	.08	.31	.05	.01
	4	.026	12.729	.00	.76	.00	.83	.00
	5	.016	16.093	.99	.16	.68	.11	.00

a. Dependent variable: resistance to change

Table C8

Regression Model 1 Residuals Statistics

	Minimum	Maximum	Mean	Std. deviation	N
Predicted value	2.9070	3.6236	3.1392	.15311	189
Std. predicted value	-1.516	3.164	.000	1.000	189
Standard error of predicted value	.076	.294	.132	.033	189
Adjusted predicted value	2.9040	3.5719	3.1389	.15392	189
Residual	-2.00880	2.34093	.000	.82484	189
Std. residual	-2.409	2.808	.000	.989	189
Stud. residual	-2.453	2.830	.000	1.003	189
Deleted residual	-2.08297	2.37905	.00029	.84857	189
Stud. deleted residual	-2.488	2.886	.000	1.008	189
Mahal. distance	.581	22.423	3.979	2.716	189
Cook's distance	.000	.044	.006	.009	189
Centered leverage value	.003	.119	.021	.014	189

a. Dependent variable: resistance to change

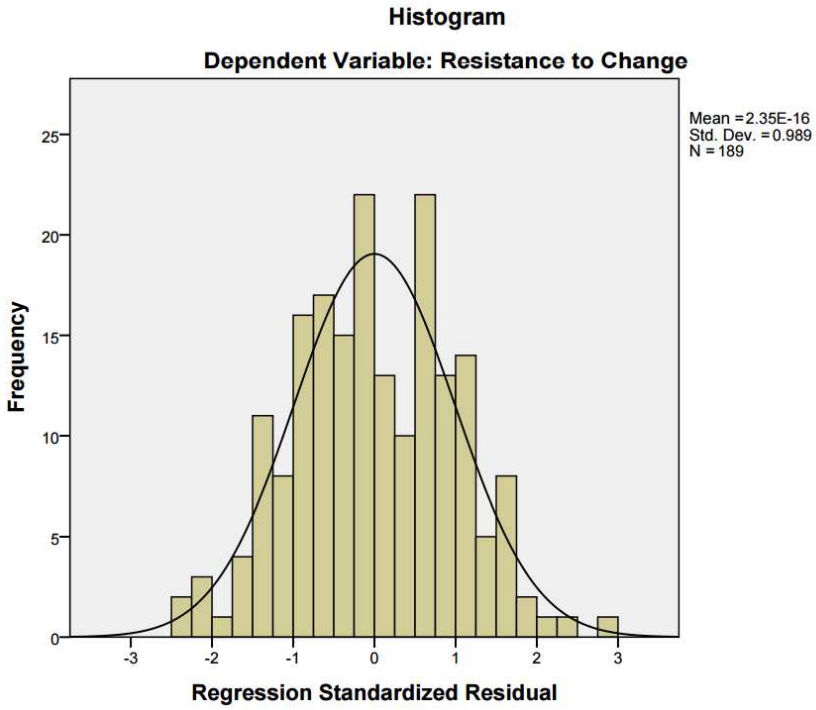

Figure C1. Regression model 1 dependent variable: Resistance score histogram.

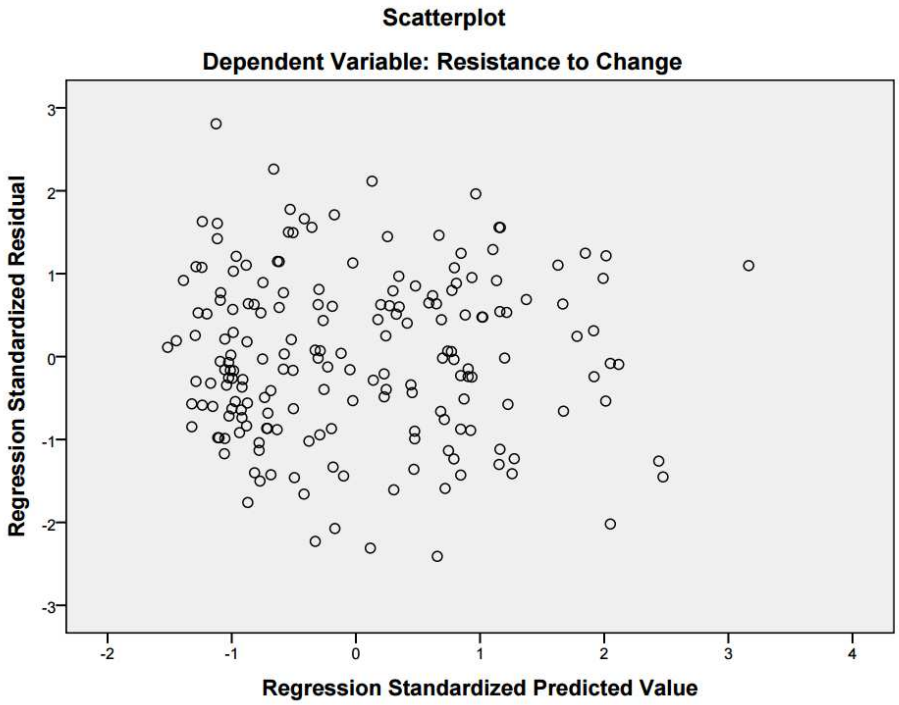

Figure C2. Regression model 1 dependent variable: Resistance score scatterplot.

Table C9

Regression Model 2 Descriptive Statistics

Descriptive statistics			
	Mean	Std. deviation	N
Resistance score	3.1392	.83893	189
Frequency of change score	4.3810	1.27699	189
History of change score	4.9767	1.35619	189
Trust ability score	4.9832	1.42862	189
Trust benevolence score	4.3933	1.65811	189
Trust integrity score	4.8104	1.30230	189
Gender Score	.3280	.47075	189

Table C10

Regression Model 2 Correlations

		Correlations						
		Resistance score	Frequency of change score	History of change score	Trust ability score	Trust benevolence score	Trust integrity score	Gender score
Pearson Correlation	Resistance score	1.000	.053	-.004	-.004	-.122	-.135	.143
	Frequency of change score	.053	1.000	-.313	-.352	-.316	-.387	.033
	History of change score	-.004	-.313	1.000	.611	.577	.638	.004
	Trust ability score	-.004	-.352	.611	1.000	.788	.864	-.047
	Trust benevolence score	-.122	-.316	.577	.788	1.000	.865	-.032
	Trust integrity score	-.135	-.387	.638	.864	.865	1.000	-.011
	Gender score	.143	.033	.004	-.047	-.032	-.011	1.000
Sig. (1-tailed)	Resistance score		.236	.477	.477	.047	.032	.025
	Frequency of change score	.236		.000	.000	.000	.000	.327
	History of change score	.477	.000		.000	.000	.000	.480
	Trust ability score	.477	.000	.000		.000	.000	.260
	Trust benevolence score	.047	.000	.000	.000		.000	.330
	Trust integrity score	.032	.000	.000	.000	.000		.441
	Gender score	.025	.327	.480	.260	.330	.441	
N	Resistance score	189	189	189	189	189	189	189
	Frequency of change score	189	189	189	189	189	189	189
	History of change score	189	189	189	189	189	189	189
	Trust ability score	189	189	189	189	189	189	189
	Trust benevolence score	189	189	189	189	189	189	189
	Trust integrity score	189	189	189	189	189	189	189
	Gender score	189	189	189	189	189	189	189

Table C11

Regression Model 2 Variables Entered/Removed

Variables entered/removed[a]			
Model	Variables entered	Variables removed	Method
2	Trust integrity score Frequency of change score History of change score Trust benevolence score Trust ability score Gender score		Enter

a. Dependent variable: resistance to change
b. All requested variables entered.

Table C12

Regression Model 2 Model Summary

Model summary[b]					
Model	R	R square	Adjusted R square	Std. Error of the estimate	Durbin-Watson
2	.316[a]	.100	.070	.80884	2.087

a. Predictors: (constant), frequency of change, history of change, trust benevolence, trust ability, trust integrity, gender
b. Dependent variable: resistance to change

Table C13

Regression Model 2 ANOVA

ANOVA[a]						
Model		Sum of squares	df	Mean square	F	Sig.
2	Regression	13.247	6	2.208	3.375	.004[b]
	Residual	119.067	182	54		
	Total	132.314	188			

a. Dependent variable: resistance to change
b. Predictors: (constant), frequency of change, history of change, trust benevolence, trust ability, trust integrity, gender

Table C14

Regression Model 2 Coefficients

Coefficients[a]												
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B		Correlations			
		B	Std. error	Beta			Lower bound	Upper bound	Zero-order	Partial	Part	Tolerance	VIF
	Constant	3.145	.418		7.529	.000	2.321	3.969					
	Frequency of change	.009	.050	.014	.183	.855	-.090	.109	.053	.014	.013	.839	1.191
	History of change	.058	.057	.094	1.012	.313	-.055	.172	-.004	.075	.071	.573	1.745
	Trust ability	.270	.084	.460	3.205	.002	.104	.436	-.004	.231	.225	.240	4.160
	Trust benevolence	-.046	.072	-.091	-.640	.523	-.188	.096	-.122	-.047	-.045	.244	4.094
	Trust integrity	-.326	.116	-.506	-2.823	.005	554	-.098	-.135	-.205	-.198	.154	6.508
	Gender	.277	.126	.155	2.198	.029	.028	.525	.143	.161	.155	.991	1.009

a. Dependent variable: resistance to change

Table C15

Regression Model 2 Collinearity Diagnostics

Collinearity diagnostics[a]										
Model	Dimension	Eigenvalue	Condition index	Variance proportions						
				(Constant)	Frequency of Change score	History of Change score	Trust Ability score	Trust Benevolence score	Trust Integrity score	Gender score
2	1	6.094	1.000	.00	.00	.00	.00	.00	.00	.01
	2	.647	3.068	.00	.00	.00	.00	.00	.00	.95
	3	.174	5.919	.1	.23	.00	.01	.03	.00	.03
	4	.041	12.257	.02	.12	.58	.00	.21	.00	.00
	5	22	16.654	.614	.17	.36	.24	.134	.02	.00
	6	.015	20.304	.67	.41	.05	.40	.13	.00	.01
	7	.008	28.263	.16	.07	.00	.35	.30	.97	.00

a. Dependent variable: resistance to change

Table C16

Regression Model 2 Residuals Statistics

	Minimum	Maximum	Mean	Std. deviation	N
Predicted value	2.4421	4.1021	3.1392	6545	189
Std. predicted value	-2.626	3627	.000	1.000	189
Standard error of predicted value	.079	.298	.151	.038	189
Adjusted predicted value	2.4632	4.1385	3.1399	.26536	189
Residual	-1.98975	2.42707	.000	.79582	189
Std. residual	-2.460	3.001	.000	.984	189
Stud. residual	-2.503	3.030	.000	1.002	189
Deleted residual	-2.05966	47443	-.00068	.82615	189
Stud. deleted residual	-2.540	3.101	.000	1.007	189
Mahal. distance	.794	24.514	5.968	723	189
Cook's distance	.000	.050	.005	.008	189
Centered leverage value	.004	.130	.032	.020	189

a. Dependent variable: resistance to change

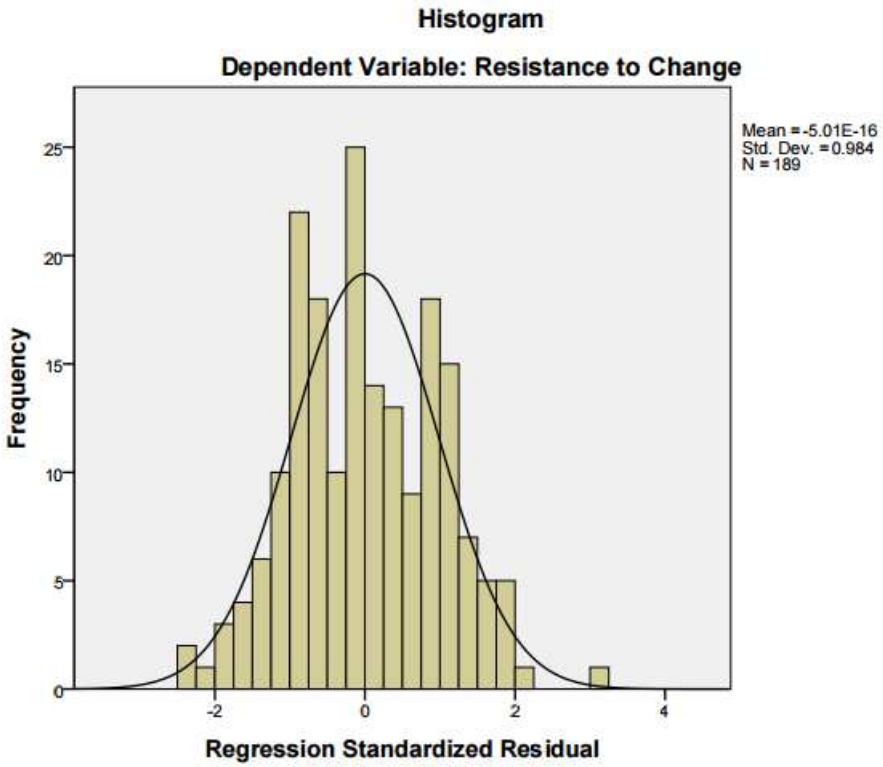

Figure C3. Regression model 2 dependent variable: Resistance score histogram.

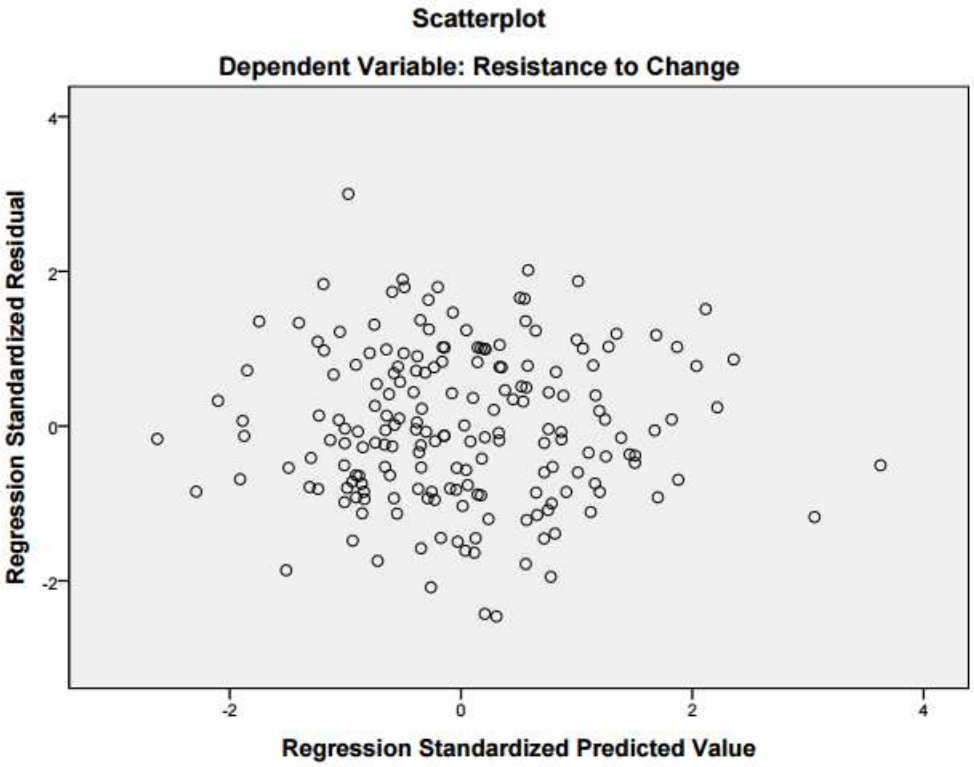

Figure C4. Regression model 2 dependent variable: Resistance score scatterplot.

Table C17

Regression Model 3 Descriptive Statistics

Descriptive statistics			
	Mean	Std. deviation	N
Resistance to change	3.1392	.83893	189
Trust in leadership-ability subsection	4.9832	1.42862	189
Trust in leadership-integrity subsection	4.8104	1.30230	189
Gender	.3280	.47075	189

Table C18

Regression Model 3 Correlations

Correlations					
		Resistance to change	Trust in leadership ability subsection	Trust in leadership integrity subsection	Gender
Pearson Correlation	Resistance to change	1.000	-.004	-.135	.143
	Trust in leadership-ability subsection	-.004	1.000	.864	-.047
	Trust in leadership-integrity subsection	-.135	.864	1.000	-.011
	Gender	.143	-.047	-.011	1.000
Sig. (1-tailed)	Resistance to change		.477	.032	.025
	Trust in leadership-ability subsection	.477		.000	.260
	Trust in leadership-integrity subsection	.032	.000		.441
	Gender	.025	.260	.441	
N	Resistance to change	189	189	189	189
	Trust in leadership-ability subsection	189	189	189	189
	Trust in leadership-integrity subsection	189	189	189	189
	Gender	189	189	189	189

Table C19

Regression Model 3 Correlations Variables Entered/Removed

Variables entered/removed[a]			
Model	Variables entered	Variables removed	Method
3	Trust in leadership-integrity subsection Trust in leadership-ability subsection Gender		Enter

a. Dependent variable: resistance to change
b. All requested variables entered.

Table C20

Regression Model 3 Model Summary

Model summary[b]					
Model	R	R Square	Adjusted R square	Std. error of the estimate	Durbin-Watson
3	.305[a]	.093	.079	.80529	2.109

a. Predictors: (Constant), trust in leadership integrity subsection, trust in leadership ability subsection, gender
b. Dependent variable: resistance to change

Table C21

Regression Model 3 ANOVA

ANOVA						
Model		Sum of squares	df	Mean square	F	Sig.
3	Regression	12.343	3	4.114	6.345	.000[b]
	Residual	119.971	185	.648		
	Total	132.314	188			

a. Dependent variable: resistance to change
b. Predictors: (Constant), trust in leadership integrity subsection, trust in leadership ability subsection, gender

Table C22

Regression Model 3 Coefficients

Coefficients[a]													
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B		Correlations				
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
3	(Constant)	3.447	.230		14.997	.000	2.994	3.901					
	Trust in leadership-ability subsection	.260	.082	.443	3.155	.002	.098	.423	-.004	.225	.223	.254	3.939
	Trust in leadership-integrity subsection	-.334	.090	-.518	-3.688	.000	-.512	-.155	-.135	-.261	-.261	.254	3.939
	Gender	.283	.125	.159	2.265	.025	.036	.530	.143	.164	.159	.994	1.006

a. Dependent variable: resistance to change

Table C23

Regression Model 3 Collinearity Diagnostics

Collinearity Diagnostics[a]							
Model	Dimension	Eigenvalue	Condition index	Variance proportions			
				(Constant)	Trust in leadership ability subsection	Trust in leadership integrity subsection	Gender
3	1	3.339	1.000	.01	.00	.00	.03
	2	.607	2.346	.00	.00	.00	.94
	3	.044	8.672	.98	.08	.05	.03
	4	.010	18.571	.01	.91	.95	.00

a. Dependent variable: resistance to change

Table C24

Regression Model 3 Residuals Statistics

Residuals statistics[a]					
	Minimum	Maximum	Mean	Std. deviation	N
Predicted value	2.5177	4.0178	3.1392	.25623	189
Residual	-2.04674	2.39402	.000	.79884	189
Std. predicted value	-2.425	3.429	.000	1.000	189
Std. residual	-2.542	2.973	.000	.992	189

a. Dependent variable: resistance to change

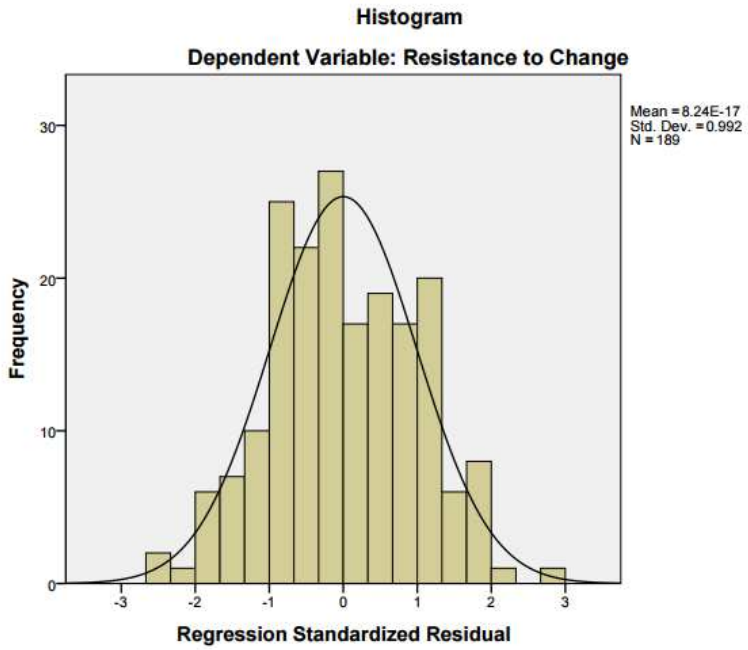

Figure C5. Regression model 3 dependent variable: Resistance score histogram.

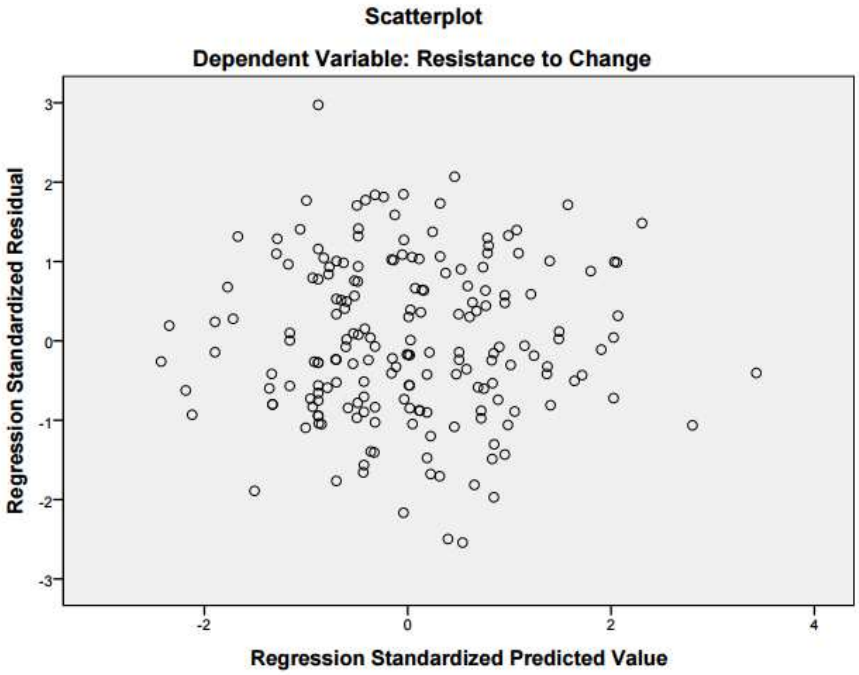

Figure C6. Regression model 3 dependent variable: Resistance score scatterplot.