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Technological Change and Employee Motivation in a Telecom Operations Team

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This is to certify that the doctoral study by

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Abstract

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BSc, University of Nigeria, 1989

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Some managers view innovative product development and convenient service delivery as necessary to business survival. However, unmotivated employees might negate any gains from the use of innovation. The purpose of this correlational study, grounded in diffusion of innovation theory, was to assess the relationship between creativity and support for innovation, resistance to change, and organizational commitment and employee motivation. A random sample of 81 information technology (IT) professionals from telecom service centers completed an online survey. Simultaneous multiple linear regression was the statistical technique used to analyze these data. The results indicated a poor model with low R^2 to significantly predicted employee motivation, F (3, 78) = 5.481, $p < .002$, $R^2 = .174$. In the final model, support for creativity and innovation were significant contributors to employees' motivation. Resistance to change was not a significant predictor to employees' motivation. Although the p-value was significant, the R^2 was low and indicated a poor model fit. Future researchers might consider incorporating additional variables to make the model more useful. The implications for positive social change include the potential to enhance telecom managers' understanding of the factors that affect employee motivation; however, managers should consider incorporating additional variables specific to the work environment. Ultimately, a manager's ability to motivate workers is vital for implementing change, particularly when the introduction of technological innovation frequently occurs within an industry.

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Dedication

The providences and goodwill humbled me throughout this doctoral journey. I dedicate this work to Our Father and God Almighty for keeping me safe and sound throughout my quest for this higher degree. I also dedicate this work to my father, Elder S.K. Ude (deceased) and my uncle, Dr. M.S.C. Nwariaku (deceased) for their unassuming worldviews that shaped me as a person. My loving mother, Edna Ude, whose prayers and love were fundamental to my successes; I dedicate this dissertation to God and my supportive family.

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This dream would not have come true without the outstanding work and dedication of my committee chairperson; special thanks to Dr. Ify Diala, whose guidance, persistence, and rigid instructions for execution of high quality work became the greatest achievement of my lifetime. Thanks for being so magnanimously supportive, helpful, and understanding. Thank you, Dr. Maurice Dawson and Dr. Christos Makrigeorgis, for your unrelenting advice that shaped the outcome of this study. Finally, I acknowledge Dr. Reggie Taylor for his uncanny ability to simplify quantitative techniques; I owe you a debt of gratitude for opening my mind and scope of understanding to statistical techniques.

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Section 1: Foundation of the Study

Employees' levels of trust and motivations are important factors for creating value and achieving organizational effectiveness (Ertürk, 2012; Fahed-Sreih, 2012). Lin (2011) claimed an employee's behaviors could lead to organizational failures when the employee exhibits a lack of trust of managers' decisions. Organizational failures could also occur when the employee needs motivation, or when the employee resists the introduction of innovative technologies.

Technology is a platform for integrating computerized systems in association with innovative management decisions that enable employees to contribute to greater operational efficiency (Wahab, Rose, & Osman, 2012). Achieving success in the telecom industry is dependent upon managers who can efficiently adopt innovative technologies in their workplaces (Hu, 2011). The effective infusion of innovation in the telecom industry is critical when managers' goals include improved service quality, service differentiation, refinement of business offerings, and business performance enhancements (Wu & Lin, 2011). Al-Adaileh and Al-Atawi (2011) and Carlström and Ekman (2012) explained the link between the adoption of innovation in the workplace and employees' levels of performance, motivation, and trust. The scholarly debate continues regarding the complexities of the institution of technological innovation in the workplace and the effect these innovations have on employees' motivations.

Background of the Problem

Strategic management is the process of identification and exploitation of appropriable value creation (Foss & Lindenburg, 2013). The causal linkages between

strategic management processes and value creation are ambiguous when actions of the top management teams affect the motivation of organizational members (Foss & Lindenburg, 2013). An example of this ambiguity is the relative importance telecom service providers place on the technology-backed innovative systems over the significance of employees' roles in organizational success (Dogerlioglu, 2012; Euchner, 2011). The evidence of such ambiguity exists in workplaces where innovation is vital for sustaining efficiencies (Litwin, 2011). Scholars showed when companies need strategic management, the inefficient use of organizational resources to implement innovative change results in poor service performance (Burdon & Feeny, 2011).

Despite the investments in new technology, managerial failures to use these technologies to create competitive advantages continue (Selcer & Decker, 2012; Soon, Lama, Hui, & Luen, 2013). However, the role employees play in adopting technological innovation remains understudied. Computer and digital technologies are integral to reshaping telecom employment practices (Singh, 2012). Managers use systems to streamline business processes in service centers (Suhasini & Babu, 2013). The streamlining of business processes includes replacing employees with automated systems; replacing employees with automated systems causes fear, low morale, and mistrust, which affect employees negatively (Vicente-Lorente & Zúñiga-Vicente, 2012). When managers use efficient technological innovation to replace employees, downsizing of the workforce becomes imminent (Das, Kumar, & Kumar, 2011). Concomitantly, employees' distrusts of managers increase and employees might perceive downsizing to be the ultimate goal of managers. These factors create an unstable business environment

and decrease motivation among employees that could jeopardize support of management. Brcar and Lah (2011) described business conditions, such as those described herein, as possible sources of poor service performances.

The underlying factors contributing to failure or success in telecom service operations include technological innovation, managerial decision-making, employees' participation, and resource availability (Conti, 2011). Of these factors, Łubieńska and Woźniak (2012) determined adopting innovative technologies affects motivation of IT employees significantly. Employees involved in implementing or adopting the latest innovation can add value to the business; however, downsizing the labor force to meet efficiency goals creates problems (Gupta, Joshi, & Agarwal, 2012). Problems associated with downsizing include the loss of technical skills, hoarding of information for improving team performance, and the development of a hostile workplace (Gupta et al., 2012). The attrition of experienced IT professionals reduces a company's competitive advantage, chances of success, and the likelihood of survival (Waraich & Bhardwaj, 2012). This friction between the role of managers to motivate employees and the adoption of innovative technology increases the complexities of relationships between managers and employees (Das et al., 2011).

The standard practice in the telecom industry is to use innovation (computerized automated systems) strategically to develop solutions for service differentiation and to improve business performance (Akkermans & Voss, 2013). Automation simplifies employees' tasks and improves response time to client service needs (Walker, Giddings, & Armstrong, 2011). Managers perceive product development and convenient service

delivery as necessary to business survival (Tellis, Yin, & Niraj, 2011). However, unmotivated employees might negate any gains from the use of innovation (Coleman, Brooks, & Ewart, 2013). Adopting technological innovation remains a strategic decision managers make routinely (Yao, Weyant, & Feng, 2011).

The strategic use of innovation to increase the competitive advantage of the firm is an evolving concept in organizational development (Cavagnoli, 2011). This paradigm shift can lead to conflicting perspectives among managers regarding how to introduce innovation. The concerns of managers include minimizing the negative impact on innovation employees' motivations and retaining the trust relationships between employees and managers. Yeh-Yun Lin and Feng-Chuan (2012) and Sathyapriya, Prabhakaran, Gopinath, and Abraham (2012) argued that these relationships remain understudied in the telecom service environment. Bry (2011) drew attention to a gap in management and business literature; by arguing that the effective diffusion of innovation implementation contributed to dissatisfaction, doubt, and resistance to change among employees. The lack of appreciation for the moral hazard associated with innovation implementation on service delivery and employees' performances required additional scholarly inquiry (Bontis, Richards, & Serenko, 2011). Further research, as described herein, could expand the body of knowledge on employee support for creativity and innovation, resistance to change, and organizational commitment in the telecom industry. The diffusion of innovation theory would be a logical theoretical basis and ideal approach for such inquiry (Demuth, 2011).

Problem Statement

Telecom managers implement innovative technologies to improve service performance, increase revenues, and reduce operational costs (Hacklin, Battistini, & Von Krogh, 2013). A result of these management goals was the downsizing of employees (Vicente-Lorente & Zúñiga-Vicente, 2012). Statisticians from the Bureau of Labor Statistics (2010) reported that employment in the United States' telecommunications sector declined by 14.5% between 2009 and 2012. This decline in employment coincided with the substantial investment in new technologies (Léger, 2010). The general business problem is that the telecom employees may mistrust managers when managers introduce innovations to increase workplace efficiency and service performance (Semerciöz, Hassan, & Aldemir, 2011). The specific business problem is that some telecom managers do not know the relationship between support for creativity and innovation, resistance to change, organizational commitment, and employees' levels of motivation.

Purpose Statement

The purpose of this quantitative correlational design was to examine the relationship between a linear combination of predictor variables and the dependent variable. The predictor variables were support for creativity and innovation, resistance to change, and organizational commitment. The dependent variable was employees' motivation in organizational settings. The target population was telecom employees in the United States; with service centers located in (a) Dallas, Texas; (b) Denver, Colorado; (c) Middletown, New Jersey; and (d) Seattle, Washington. This population was appropriate for this study because these employees had the experience of implementing innovative

technologies. The implication for positive social change is that managers could use these results to moderate employees' resistances to technological changes by creating an environment that could be supportive of innovation implementation and invigorating to employees' levels of motivation and creativity.

Nature of the Study

Quantitative research is a logical method for examining relationships between variables by analyzing data collected from surveys or experiments in order to arrive at a conclusion (Nasef, 2013). Fisher and Stenner (2011) acknowledged the use of the quantitative method to examine established research problems, frame the hypothesis or hypotheses, collect data, interpret the findings of the study, and draw conclusions. A quantitative research method was suitable for this study because statistical methods were appropriate for determining the extent of the relationship between study variables (Green & Salkind, 2011).

The empirical and methodological procedures involved in quantitative methods were convenient approaches for addressing the statistical complexities and inconsistencies associated with research (Nasef, 2013). Qualitative and mixed methodologies were inappropriate for this study because of the emphasis placed on inductive inference of participants' experiences. The mixed method of research did not apply to this study because I could not use both deductive and inductive approaches to complement and corroborate findings (Cameron & Molina-Azorin, 2011; Nimon, 2011).

Conducting a multiple linear regression analysis in this study involved empirical analysis of data, testing of hypotheses, and determination of any relationships between

the predictor variables and the dependent variable (Ansong & Gyensare, 2012). Therefore, a correlation research design was appropriate for establishing a relationship existing between two or more quantifiable variables in this study (Fisher & Stenner, 2011). A rationale for choosing a correlation design over an experimental design pertained to the goal of examining the relationships between variables rather than determining cause and effect (Ansong & Gyensare, 2012).

The causal-comparative (quasi-experimental) and experimental research methods, commonly termed *true experimentation*, were unsuitable for this study because an experimental design entails direct manipulation and control of the predictor variables (Aussems, Boomsma, & Snijders, 2011). The ability to regulate alternative explanations and deduce direct causal relationships is a core benefit of the experimentation design. However, because this approach often creates reverse causal or reciprocal relationships it was not suitable for a study of this type (May, Luth, & Schwoerer, 2014; Sinha, 2011).

Research Question

The deployment of innovation by telecom managers is strategic to business value creation. The unintended outcome resulting from the use of technological innovation includes downsizing of workers and resistance of employees to support innovation, resulting in an unmotivated workforce in the telecom service centers. The central research question was: What relationships exist between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation?

Hypotheses

The research hypotheses reflected the research question. The hypotheses were:

*H*1o: There is no relationship between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation.

*H*1a: There is a relationship between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation?

Survey Questions

In this study, I measured the predictor variables with the following survey instruments (a) Climate for Innovation Measure (CIM), (b) Resistance to Change Scale (RCS), and (c) Organization Commitment Scale (OCS). The Work Extrinsic and Intrinsic Motivation Scale (WEIMS) survey was useful for measuring the dependent variable, employees' motivation in organizational settings. These well-established instruments, survey content, and items in the questionnaires aligned with the purpose of extracting the information required to answer the research questions by examining the research constructs (Yang, Xu, Xie, & Maddulapalli, 2011).

Climate for Innovation Measure. Bruce and Scott (1994) developed the Climate for Innovation Measure. The instrument consisted of 22 questions, which I used to measure the participants' support for creativity and innovation. Appendix A contains the author's permission to the use of the instrument. Figure 1 depicts the 22 items comprising the CIM.

Resistance to Change Scale. Oreg (2003) developed the Resistance to Change Scale. The scale consists of 17 items that measure tolerance for change. Figure 2 depicts

the 17 questions comprising the RCS. I received the author's permission to the use of the instrument (see Appendix B).

Organizational Commitment Scale. O'Reilly and Chatman (2003) developed the Organizational Commitment Scale. The scale consisted of 12 items that were useful for measuring organization commitment, the predictor variable in the study. I sent an e-mail to O'Reilly and Chatman (2003) requesting for permission to use the survey in part or in full. The author's response permitted the use of the instrument (see Appendix C). Figure 3 depicts the 12 questions included in the OCS.

Work Extrinsic and Intrinsic Motivation Scale. The WEIMS contained 18 questions items adapted from research conducted by (Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2009). I used this instrument to measure employees' motivation in organizational settings. Figure 4 depicts the 18 questions that comprised the WEIMS. I received the author's permission to use the instrument (see Appendix D).

1	2	3	4	5
Strongly Disagree (SD)	**Disagree (D)**	**Neutral (N)**	**Agree (A)**	**Strongly Agree (SA)**

Place a check mark in the column that matches the extent to which you feel that you perceive each of the following situations:

1. Creativity is encouraged here.
2. Our ability to function creatively is respected by the leadership.
3. Around here, people are allowed to try to solve the same problems in different ways.
4. The main function of members in this organization is to follow orders, which come down through channels.
5. Around here, a person can get in a lot of trouble by being different.
6. This organization can be described as flexible and continually adapting to change.
7. A person cannot do things that are too different around here without provoking anger.
8. The best way to get along in this organization is to think the way the rest of the group does.
9. People around here are expected to deal with problems in the same way.
10. This organization is open and responsive to change.
11. The people in charge around here usually get credit for others' ideas.
12. In this organization, we tend to stick to tried and true ways.
13. This place seems to be more concerned with the status quo than with change.
14. Assistance in developing new ideas is readily available.
15. There are adequate resources devoted to innovation in this organization.
16. There is adequate time available to pursue creative ideas here.
17. Personnel shortages inhibit innovation in this organization.
18. Lack of funding to investigate creative ideas is a problem in this organization.
19. The reward system here encourages innovation.
20. This organization gives me free time to pursue creative ideas during the workday.
21. This organization publicly recognizes those who are innovative.
22. The reward system here benefits mainly those who do not rock the boat.

Figure 1. Climate for Innovation Measure by Bruce and Scott (1994). Adapted from innovation Measure by Bruce and Scott (1994). By S. G. Scott and R. A. Bruce, *Academy of Management Journal, 37,* p. 593. Copyright 1994 by ProQuest. Reprinted with permission (see Appendix A).

1	2	3	4	5	6
Strongly Disagree (SD)	**Disagree (D)**	**Inclined to Disagree(N)**	**Inclined to Agree (A)**	**Agree**	**Strongly Agree (SA)**

Place a check mark in the column that matches the extent to which you feel that you perceive each of the following situations:

1. I generally consider changes to be a negative thing.
2. I will take a routine day over a day full of unexpected events any time.
3. I like to do the same old things rather than try new and different ones.
4. Whenever my life forms a stable routine, I look for ways to change it.
5. I'd rather be bored than surprised.
6. If I were to be informed that there's going to be a significant change regarding the way things are done at work, I would probably feel stressed.
7. When I am informed of a change of plans, I tense up a bit.
8. When things don't go according to plans, it stresses me out.
9. If my boss changed the criteria for evaluating employees, it would probably make me feel uncomfortable even if I thought I'd do just as well without having to do any extra work.
10. Changing plans seems like a real hassle to me.
11. Often, I feel a bit uncomfortable even about changes that may potentially improve my life.
12. When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.
13. I sometimes find myself avoiding changes that I know will be good for me.
14. I often change my mind.
15. I don't change my mind easily.
16. Once I've come to a conclusion, I 'm not likely to change my mind.
17. My views are very consistent over time.

Figure 2. Resistance to Change Scale by Oreg, 2003. Adapted from "Resistance to Change: Developing an Individual Differences Measure." By Shaul Oreg, *Journal of Applied Psychology*, *88*(4), p. 684. Copyright 2003 by Journal of Applied Psychology. Reprinted with permission (see Appendix B).

Strongly Agree **Somewhat Agree** **Strongly Disagree**

1 2 3 4 5 6 7

Place a check mark in the column that matches the extent to which you feel that you perceive each of the following situations:

1. If the values of this organization were different, I would not be as attached to this organization.
2. How hard I work for the organization is directly linked to how much I am rewarded.
3. The reason I prefer this organization to others is because of what it stands for, its values.
4. My attachment to this organization is primarily based on the similarity of my values and those represented by the organization.
5. Unless I am rewarded for it in some way, I see no reason to expend extra effort on behalf of this organization.
6. I am proud to tell others that I am part of this organization.
7. In order for me to get rewarded around here, it is necessary to express the right attitude.
8. I feel a sense of "ownership" for this organization rather than being just an employee.
9. What this organization stands for is important to me.
10. Since joining this organization, my personal values and those of the organization have become more similar.
11. My private views about this organization are different than those I express publicly.
12. I talk up this organization to my friends as a great organization to work for.

Figure 3. The Organizational Commitment Scale by O'Reilly and Chatman, 1989. Adapted from "Organizational Commitment and Psychological Attachment: The Effects of Compliance, Identification, and Internalization on Prosocial Behavior." By C. O'Reilly & J. Chatman. *Journal of Applied Psychology*, *71*(3), 492-499. Copyright 1986 by Journal of Applied Psychology. Reprinted with permission (see Appendix C).

1	2	3	4	5
Does Not Correspond At All	**Does Not Correspond**	**Neutral (N)**	**Correspond Moderately**	**Correspond Exactly**

Place a check mark in the column that matches the extent to which you feel that you perceive each of the following situations:

1. Because this is the type of work I chose to do to attain a certain lifestyle.
2. For the income it provides me.
3. I ask myself this question, I don't seem to be able to manage the important tasks related to this work.
4. Because I derive much pleasure from learning new things.
5. Because it has become a fundamental part of who I am.
6. Because I want to succeed at this job; if not, I would be very ashamed of myself.
7. Because I chose this type of work to attain my career goals.
8. For the satisfaction I experience from taking on interesting challenges,
9. Because it allows me to earn money.
10. Because it is part of the way, in which I have chosen to live my life.
11. Because I want to be very good at this work, otherwise I would be very disappointed.
12. I don't know why we are provided with unrealistic working conditions.
13. Because I want to be a "winner" in life.
14. Because it is the type of work I have chosen to attain certain important objectives.
15. For the satisfaction, I experience when I am successful at doing difficult tasks.
16. Because this type of work provides me with security.
17. I don't know, too much is expected of us.
18. Because this job is a part of my life.

Figure 4. Work Extrinsic and Intrinsic Motivation Scale by Tremblay et al. (2009). Adapted from "Work Extrinsic and Intrinsic Motivation Scale: It's Value for Organizational Psychology Research." By M.A. Tremblay, C.M. Blanchard, S. Taylor, L.G. Pelletier, and M Villeneuve, *Canadian Journal of Behavioral Sciences, 41,* p. 226.

Theoretical Framework

Diffusion of innovation was the theory that I selected for this research study. First published in 1962 as *Diffusion of Innovations*, Rogers (2003) illustrated the five characteristics of innovation (compatibility, relative advantage, trialability, observability, and complexity) by focusing on the adoption and implementation of innovations in different company settings (see Motohashi, Lee, Sawng, & Kim, 2012; Walker, Avellaneda, & Berry, 2011). Diffusion of innovations was the means of communicating innovation through established channels over time among members of a social system. Rogers (2003) characterized members as adopters of the process (Rogers, 2003). The fundamental attributes of the diffusion of an innovation process included (a) innovation, (b) communication channels, (c) time, and (d) a social system (Gounaris & Koritos, 2012; Larsen, 2011).

The theory of diffusion of innovation was effective for conceptualizing the advantages of using innovation as a competitive organizational strategy (Flight, Allaway, Kim, & D'Souza, 2011). Understanding the factors that affect adoption of innovation by employees, coupled with management strategies to direct employees' performance was a critical factor in selecting this theory. The diffusion of innovation is relevant for understanding the features of the individual adopter, the implementation environment of the innovation, and the innovation itself (Rogers, 2003). Furthermore, this theory applied to the examination of the employees' understanding and support for innovation in the telecom service centers, the site of this study.

Salman and Hasim (2011) identified (a) relative advantage, (b) compatibility, (c)

complexity, (d) trialability, and (e) observability as the five factors critical for reducing uncertainties during the diffusion of innovation in an organizational setting. The telecommunications industry is an example of workplace where technological development and innovation deployment occur continuously. The theory was applicable in many studies examining the adoption of innovation in service sectors (Barrett, Heracleous, & Walsham, 2013).

Chen, Zang, and Chao-Hsien (2011) and Conrad, Michalisin, and Karau (2012) showed the theory was appropriate for identifying problems of potential adopters, the successes or failures in service quality, and poor performance. In addition, diffusion of innovation theory was useful for researchers' examination of employee motivational behavior and managers' decision-making processes in an organization undergoing technological change. Diffusion of innovation theory was appropriate and relevant in gaining insight to challenges faced by managers in moderating employees' motivation as a response to the workers understanding and support for innovation (Flight et al., 2011).

Motohashi et al. (2012) claimed diffusion of innovation theory was an appropriate framework for understanding the role of innovation from the organizational development perspective. Rogers (2003) used this theory to outline (a) the perceived characteristics of the innovation, (b) the innovation decision, (c) the channels of communication, (d) the business of the social system, and (e) the change agent efforts as factors that influence the adoption of innovation. Innovation was the predictor of the rate of adoption; innovation depicted the relationship between anticipated benefits and the costs (Roger, 2003). Lee and Fink (2013), and Uzkurt, Kumar, Kimzan, and Eminoglu (2013) reported this theory

was applicable to studies examining innovation from multifacet perspectives. Lee and Fink, and Uzkurk et al. claimed researchers could apply the theory to studies of organizational culture, individual creativity, and mutual desires to adopt new technologies. Salman and Hasim (2011) established a link between the theory and the creation of organizational value. Given its versatility, the theory of innovation diffusion was a suitable lens for evaluating the results of the study (Smerecnik & Andersen, 2011; Walker et al., 2011).

Innovation in service industries serves the business goal of improving organizational capabilities and increasing efficiency by eliminating repetitious tasks (Arndt & Harkins, 2012). The unintended consequences of innovation adoption included employees' resistance to change, job elimination through downsizing, and loss of knowledgeable human capital (D'Alvano & Hidalgo, 2012; Lendel & Varmus, 2012). Diffusion of innovation theoretical framework was appropriate for examining the relationship between the use of innovation and organizational perceived motives for implementing innovation (Hastheetham & Hadikusumo, 2011).

The theory was a useful concept for explaining ideas, processes, and results related to the adoption of new practices in different fields (Conrad et al., 2012; Dingfelder & Mandell, 2011; Hsieh, 2011; Ratts & Wood, 2011; Reiner, 2012). Furthermore, this theory was applicable to various fields including business development and management, information technology and systems management, education, psychology, organizational behavior, and social sciences. Understanding the use of innovation by managers in technological-based businesses and the impact on employees'

behaviors is relevant to creating value that affects the business positively (Flight et al., 2011). This knowledge could help business leaders who make strategic decisions involving the adoption of innovation (Denning, 2010). Furthermore, Denning (2010) claimed knowledge would help leaders to moderate employees' behaviors toward a seamless execution of business objectives for increased productivity and performance.

Definition of Terms

In this section, I provided concise definitions of terminologies used in this study. These definitions represent unambiguous meanings for the unique terms used in the context of this study.

Change management: Change management is an assessment, check, implementation, and verification of process used in managing change operations (Babalâc & Uda, 2014; Nikolaeva, 2012)

Diffusion: Diffusion is the process by which a product or idea is accepted and communicated through certain channels over time among the members of a social system (Rogers, 2003).

Innovation: Innovation is an idea, practice, or object perceived as new by an individual or group (Lewis & Wright, 2012; Rogers, 2003).

Innovation-decision process: A process used for decision-making in the initial understanding of innovation (Rogers, 2003).

Rate of innovation adoption: The length of time required for an individual, who is in a social system, to adopt a new technology or innovation (Rogers, 2003).

Service center or service desk: This is an integrative computer system operated

and used by telecom service providers to fix problems and help customers to solve problems (Jaiswal & Levina, 2012; Lund, 2012).

Service quality: Subjective assessments of customer expectations and perceptions of service delivered or provided by service center representatives (Boohene & Agyapong, 2011).

Trust: A person's belief about another individual about some properties (ascription of mental attitudes, abilities, and opportunities of the trustee) relevant to the performance of a given goal is trust (Krot & Lewicka, 2012).

Assumptions, Limitations, and Delimitations

Assumptions

In this study, I made five assumptions. The first assumption was that the participants applied personal experiences to answer the questions in the instruments. Second, the assumption was that participants' responses to the survey items of the instrument were reliable. The third assumption of the study was that the sample data characterized or represented the population. Fourth, there was the assumption that multiple linear regression analysis was an appropriate design to examine the relationship between the variables and for confirming the presence of or lack of the relationship. Lastly, I made an assumption that the survey instruments would facilitate accurate measurements of the variables in this study.

Limitations

The findings in this research were only applicable to the telecommunication service centers in the United States. The sincerity and honesty of the study's participants

and the accuracy of the instruments that I used to measure the variables limited the study's results. The participants' expressions of shared experiences relating to adoption of innovation might differ between telecom companies across the United States. The sample participants' resemblances to the general population limited the generalizability of the study's results.

Delimitations

The first delimitation in the study was that my use of online surveys eliminated direct contact with the participants; therefore, the hidden meanings of the participants' responses might not emerge. The second delimitation was that employees' support for creativity and innovation for new technologies implemented in telecom companies operating in United States might not be identical. Differences in employees' support might relate to personal exposures to different technologies, educational backgrounds, management practices, business values, and strategic intents. The third delimitation was the eligibility criteria for the inclusion of participants in this study. The eligibility criteria were (a) participants were employees of a telecom company, (b) participants were knowledgeable in IT and computerized systems used in the service centers, (c) participants experienced technological or innovative changes in the service centers, and (d) participants were non-management employees or line managers/supervisors. Not every telecom employee works in the IT field; therefore, employees who lacked knowledge or experience in the IT services within the telecom industry were not eligible to participate in the study. Another exclusion criterion was the level of responsibility associated with the participant's position. A delimitation in this study was employees in

senior management roles were ineligible to participate. The understanding and support of the employees for innovative development could vary among telecom workers and was unlikely to be the same for all employees within the same company.

Significance of the Study

The role of innovation is critical in three areas, achieving quality service, making far-reaching decisions and creating efficiency in service centers. The introduction of computerized systems as innovative strategic approaches to reducing operational costs entails the deployment of systems that may adversely affect employees' motivations to support managements' strategic intents to adopt the innovations (Denning, 2011; Meier, Ben, & Schuppan, 2013; Swanson, 2012). The deployment of advanced technology is essential to competing and improving service performance in the telecommunication sector. The results of this study could be significant to business practitioners through the identification of the value of managing employees' motivations during the adoption of innovations.

The technological enhancements designed to reduce operational costs may cause a loss of experienced, telecom-trained employees and the attrition of organizational memory to other competitors (Hsing & de Souza, 2012). This study could be significant in identifying alternative strategies that telecom managers could use to influence employees' levels of support for creativity and innovation without creating hostile work environments. Business practitioners must understand how employees' positive or negative perceptions of innovation could affect (a) decision-making processes, (b) the development of employees' tasks, (c) operational costs, (d) levels of service quality, and

(e) employees' motivations (Ahmad et al., 2010). The results of this study might lead to an appreciation of ways that managers can use strategy maximize employees' levels of support for creativity and innovation; these are elements critical to business survival in the telecommunication sector (Yi-Ju, 2011).

Reduction to Gaps

The costs of technological failures to telecom companies and other allied sectors in the United States, and the value of adopting innovation for developing competitive advantages and benefiting the business continuity saturate the literature. Interest in this topic is evident by numerous scholarly and peer-reviewed studies (Fearon, Manship, McLaughlin, & Jackson, 2013; Meier et al., 2013; Naranjo-Valencia et al., 2011). McDermott and Prajogo (2012) studied the role of innovation in relation to service performance, competitive advantages, and how newly introduced innovation affects employees' motivations in ways that could pose challenges to managers and business practitioners. Bentzen, Christiansen, and Varnes (2011) and Swanson (2012) advocated for continued examinations the field.

In this study, the goal was to fill the gap in the literature by examining (a) the role of innovation in telecom service centers; (b) the use of innovation to gain strategic or competitive advantage; and (c) how innovation practices might influence employees' behaviors. The results of this study added clarity to linkages among existing literature findings, business theories, and management practices as an avenue to understand reasons for differences in employees' motivations, despite the positive use of innovation to improve tasks. Filling this gap in the literature required an extensive review and study of

the role of innovation in telecom service centers, and of employees' support for creativity and innovation, tolerance for change, organizational commitment, and motivations in telecom service centers.

Information from the study adds clarity to managerial options or strategies to moderate employees' behaviors affected by organizational change (Agboola & Salawu, 2011). The results from this quantitative study may become relevant in identifying gaps in management capabilities and strategies in relation to the use of innovation in the telecom service centers. This study reduced the gap in the literature by examining the possible relationships between innovation and telecom employees' motivations (Bhaduri & Kumar, 2011). The results of this study added to the literature on diffusion of innovation principles. Agyapong (2011) proported studies of this type could offer insights on innovation adoption, adapter behaviors, and management practices in mitigating innovation adoption related problems, and the roles of innovation in organizational performance. This study is a continuation of the sustained examination of linkages between implementation of innovation and employees' behaviors.

Implications for Social Change

The findings in this study may contribute to positive social change by advancing research recommendations that could increase employees' motivations to support innovation in business settings involving new technology (Fearon et al., 2013). Meier et al. (2013) acknowledged the importance of the telecommunication industry to personal, public, and social sectors. According to Meier et al., the insights gained from this study may help company managers develop new strategies for adopting an innovation without

creating hostility in the workplaces. Business practitioners, telecom managers, and scholars are likely to gain insights relating to the challenges companies face while motivating employees' during change processes. The purpose of this study was to add information to the existing literature about change management; the results of this study may be relevant in the areas of social sciences and management where workforce resistance to technology may be prevalent.

Social change embodies the creation of significant differences on a reasonable basis for individuals, communities, and the larger society. Positive social change brings about benefits that affect behaviors, actions, conducts, and prospects (Mura, Lettieri, Radaelli, & Spiller, 2013; Wang & Hsu, 2012). The results of this study might increase understanding of employees' behaviors in using innovation in a telecom company. Improved knowledge of employees' resistances to innovation may help managers understand the workers' roles, and might lead to a decrease in business failures by providing options that increase the workforce responsibility with respect to organizational goals. Telecom company managers could use the results of this study to increase adoption of innovation to increase employees' training, development, and proficiencies in preparation for future changes.

Developing an understanding of the management strategies needed to improve organizational performance, service qualities, and employees' motivations is the basis of this study. Innovative changes such as computerized automated technologies often result in the downsizing of the company's workforce, which in turn affects the social and economic stability of communities (Watanabe, Nasuno, & Shin, 2011). A management

option that creates opportunities for downsized employees increases the value of individuals' career prospects. Positive social change might occur if telecommunication managers use innovative technology to create job opportunities.

A Review of the Professional and Academic Literature

The literature reviewed consists of information that I gathered from peer-reviewed journals with analyses, debates, arguments, and discussions based on contrasting and similar views relating to the adoption of innovation and employees' motivations in telecom service centers. The topics included: (a) strategic role of innovation and technology, (b) diffusion of innovation, (c) management innovative decision, (d) innovation failures in telecom service centers, (e) strategic management and system thinking, and (f) organizational leadership and change management. There are intellectual discussions and reviews of employees' motivations regarding commitment practices as well as an analysis of self-determination theory in relation to employees' motivational behaviors. My search for literature involved the use of keywords: *automation*, *sustainability, collaboration, diffusion of innovation, change management, competitive advantage, innovation, technology invention, adoption, information technology, management, employees' motivation, IT strategy, perception, service quality, employ trust,* and *telecommunication*. Electronic databases such as ABI/INFORM Complete, Business Source Complete, Science Direct, Management & Organization Studies, EBSCO, ProQuest Central, ProQuest dissertations and thesis, and Academic Search Complete were sources of literature used in this review.

Strategic Role of Innovation and Technology

Lewis and Wright (2012) described innovation as a set of strategies and techniques, or object-structured approaches, managers used to produce state-of-the-art products, services, or systems. Manager's value creation and strategic growth, service quality enhancement, preferred customer satisfaction, financial stability, service efficiency, productivity, and transformation of telecom business processes were dependent on innovation (Hsieh, Rai, Petter, & Ting, 2012). Foss and Lindenberg (2013) provided insight into the relationships between value creation, strategic leadership, and strategic goals that were similar to findings published from the Lewis and Wright (2012) studies. Foss and Lindenberg (2013) found firm-level value creation and sustained competitive heterogeneity were primary reasons why innovation remained important to firm performance.

In two studies, Hao-En (2011) and Hsieh et al. (2012) confirmed the relationship between customers' expressed satisfactions and employee retention, strategic business growth, profitability, and competitive advantages. Bordum (2010) identified growth, economic base, return on investments, and profit as measurable business goals achievable through efficient use of technology. Return on investment and financial growth were important indicators and reasons why investors and managers acquired new technologies to promote business development. The organizational focus on return on investment encompassed the use of the latest innovation to influence consumers' preferences. A consumer's patronage and preference to use the services depended on equipment functionality, level of services, and reliability; a consumer's retention was important to

the competitive nature of telecom survival (Lunn, 2013). Providing quality services using high-end technology minimized the loss of revenues and investment risks associated with customer turnover (Geetha & Jensolin, 2012).

The deployment of broadband technologies was an important factor in the digitalization telecom services; digitalization involved the migration of fixed lines to the mobile system used in initiatives to support future synergies in the industry (Polykalas, Prezerakos, & Nikolinakos, 2012). Addressing the concerns for future expansion of consumers' services, Soon et al. (2013) noted the incorporation of computerized systems and broadband technology as the fundamental initiatives used by telecom businesses. Incorporations of systems and technologies help telecom leaders meet longer-term future transformation at lower costs (Polykalas et al., 2012).

The rise in use of modern technologies began in the post deregulation era in the United States' telecom sector in the late 1980s. Before legislators deregulated the industry, monopolistic operators determined the levels and quality of services that consumers received (Frieden, 2012). The telecom companies operating under the monopolistic conditions minimized the roles of innovation in the development of competitive strategies. American Telephone and Telegraph (AT&T) was one of the prominent companies operating under such monopolistic condition (Chandar & Miranti, 2009).

Federal legislators used the Telecommunication Deregulation Act of 1984 to break up monopolistic companies into smaller telecom companies and stimulated competitiveness between the well-established service operators and the newer rivals

(Shelanski, 2012). The result was the perception of forcing service providers to embrace innovation in modern technology as means to survive competition (Abu, 2014; Füller, Hutter, Hautz, & Matzler, 2014; Kuznetsova & Roud, 2014). The implementation of transitional change created opportunities for the introduction of different types of innovation in the telecom industry. With the newly introduced technologies and innovations, job markets and the human capital needs of companies changed; employers sought workers who had computer skills to support the changes in the sector (Khan, Shah, Majid & Yasir, 2014; Ratna & Chawla, 2012).

The ability to provide optimal customer services requires organizational leaders to embrace innovations. Hao-En (2011) and Hsieh et al. (2012) discussed the role of frontline service employees in using computerized technology to address customer's problems. Hao-En and Hsieh et al. determined the prevalent service model for reducing customer' service requests included the deployment of tools for customer self-service support. Automation consisted of technological platforms used for customer self-support services without human intervention. With the effective implementation of automation, managers required fewer employees to manage work; concomitantly, managers eliminated repetitive tasks as a cost reduction strategy (Arndt & Harkins, 2012). Adding self-service tools was a way to offer customers choices for problem resolution when they (customers) followed instructions given through automated systems. Arndt and Harkins (2012) described automation as a monotonous activity designed to create efficiencies and consistencies in service or production processes with a better level of stability and control.

Globally, companies used advanced technological systems to drive organizational goals (Carmeli, Atwater, & Levi, 2011). Gruber and Koutroumpis (2011), Lee, Levendis, and Gutierrez (2012), and Usharani and Kavitha (2012) conducted studies relating to the impact of telecom mobile system on economic development. In their respective studies, these researchers acknowledged the dependencies on technological innovation by telecom companies in intercontinental trades, allied service supports, modernization of the economies, and the important role of innovation expanding their service capacities.

International operations involved a combination of employees located in different countries and the use of advanced technology to deliver services across national boundaries in diverse cultural settings (Gkoulalas-Divanis & Verykios, 2011). van Veenstra, Aagesen, Janssen, and Krogstie (2012) demonstrated the dependence on advanced computerized systems and the use of innovation in the daily operations of allied industries like banking, transport, education, and military institutions, in a study on role of innovation in global competitions. Managers deployed enhanced technological systems to maintain effective global operations and to develop economies of scale. Additionally, managers improved global operational capabilities by supporting the corroborative capabilities of employees from different geographic regions (Rader, 2012).

Managers relied on indicators of service quality to improve telecom services and deliver services in ways that were critical to acquiring and retaining customers. Golder et al. (2012) described service quality as an elusive and theoretical construct used in measuring service delivery. Nimako, Azumah, Donkor, and Adu-Brobbey (2012) defined service quality as an attitude tied to expectations and perceptions of performance. In the

telecom sector, service qualities ascribed to products and services were key competitive opportunities for achieving corporate profitability and survival (Nimako et al., 2012). From the managers' perspectives, the linkage between service quality and customer satisfaction depended on the use of new technology and innovation to achieve service sustainability, profitability, and competitiveness (Anninos & Chytiris, 2012).

The primary undertakings of service center operations were to meet and exceed expectations for service quality, customer satisfaction, and service fulfillment (Rönnbäck & Eriksson, 2012). The important role of service quality in telecom businesses included maintenance of market shares through customer retention synergies (Boohene & Agyapong, 2011). Çifci and Koçak (2012) and Huang, Yen, Liu, Huang (2014) offered a different view, which explained a relationship paramount to the promotion of products and services between customers' service preferences, quality of service provided by the telecom company, and the company's corporate image. Acknowledging the need for the use of excellent service quality to achieve an acceptable public image, Bordum (2010), and He and Le (2011) noted that telecom companies with poor quality services suffered bad publicity and were unattractive to customers.

Diffusion of Innovation

Everett Rogers published the seminal work on diffusion theory in his 1962 book titled *Diffusion of Innovations;* the author outlined the established processes of innovation within a social system, using a channel in a given time or period (Flight et al., 2011). The classic examples of diffusion of innovation in the telecommunication service centers were the introduction of automated computer systems to replace manual methods.

The introduction of innovation in a business setting follows four key factors considered as the base assumption in the diffusion of innovation theory (Roger, 2003). These four key factors consist of (a) innovation, (b) communication channels, (c) time, and (d) social network (Motohashi et al., 2012; Salman & Hasim, 2011) that were pertinent to analyzing a business problem relating to diffusion of innovation through a particular period (Rana, Williams, Dwivedi, & Williams, 2011; Reiner, 2011). Roger (2003) redefined the diffusion of innovation processes to include (a) agenda setting, (b) matching, (c) clarifying, (d) redefining/restructuring, and (e) routinizing. Rogers (2003) used the theory to describe the roles of the change owners, agents, and implementers as significant to the success of the diffusion process as exemplified by the deployment of technology in telecom service centers.

The decision-making processes to implement or use innovation remained critical performance aspects of managers in business settings. In articulating managers' innovation decision-making processes in relation to introducing innovation in response to business problems, Rogers (2003) postulated innovation-decision processes occurred at two levels, at both individual and corporate levels. Decisions made at the individual level are dependent on an employee's role in implementing the new technology, preference for job stability, and motivation within the organization (Rogers, 2003). At the corporate level, Rogers considered innovation decision-making as the process of implementing innovation based on the experience of the environment, persuasive and decisive decisions, and the confirmation of the results. Although Reiner (2011) concurred with Rogers about the delineation between individual and corporate level innovation decision-

making attributes, Reiner further expanded innovation decision processes at the corporate level to include goal setting, problem solving, and sustainability, which are decisive factors in introducing and using innovation in the workplace.

In their studies on factors influencing innovation strategic alignment and sustainable competitive advantage, Almajali and Dahalin (2011), Rossi, Russo, and Succi (2012), and Sakchutchawan, Hong, Callaway, and Kunnathur (2011), acknowledged the importance of diffusion of innovation in business research and expanded the scope of innovation decision processes to include the introduction of new products, adoption of new technologies, and restructuring of business processes. Quazi and Talukder (2011) linked technological adoption to the compatibility, trialability, and observability of the future adopters, and discussed negative results of adopting an innovation when the employees recognize the innovation to be complex. Likewise, Trigueros-Preciado, Pérez-González, and Solana-González (2013) acknowledged the negative result of adopting an innovation but noted innovation decision processes as managers' mechanisms for evaluating and responding to problems associated with the adoption of innovation.

Implemented innovative changes enhanced the potential for success, for business growth opportunities, and for unexpected problems resulting from the ill-perceived notion about the introduced innovations in a business setting (Flight et al., 2011). Leadership failures to reduce the negative outcomes associated with the complexities of innovation were significant problems characterizing implementation of innovation in technological based organizations (Marshall, 2010). Managers introduce innovation when faced with challenges and opportunities to improve services or launch new products (Li

& Sui, 2011) requiring a combination of innovative thinking, change management practices, and reinforced management practices, illustrated in the diffusion of innovation theory (Leavy, 2011).

A comparison existed between the diffusion of innovation theory and the technology acceptance model (TAM), a well-known model of technology developed by Davis to demonstrate a user's acceptance of information systems and technology (Conrad, 2013). Conrad (2013) noted the use of TAM and the assumption of the perceived ease and usefulness of technology as the two determinants influencing the user's acceptance of the technology. Conrad (2013) found TAM to be appropriate for examining the adoption of technology and perceived value of technology in a group setting. Conrad (2013) described the relationship between diffusion of innovation and TAM, describing TAM as an information system-based theory for explaining a user's acceptance and attitude toward the adoption of innovation.

Çelik and Yilmaz (2011) acknowledged TAM as an information technology modeling approach that could account for the acceptance of technology, representing an extended model. However, the authors differed from Conrad (2013) who argued for the TAM as an alternative model to the diffusion of innovation model. Conrad et al. (2012) discussed the differentiation between the two models and was in favor of the use of TAM as a model for understanding the relationship between technology usefulness and the perceived value of technological adoption. Conrad et al. (2012) and Faullant, Füller, and Matzler (2012) in different studies on diffusion of innovation noted diffusion theory as a proper model for explaining problems associated with technological adoption at

organizational level. Despite the similarities and differences in the scholarly views on the theoretical applications of diffusion of innovation theory, scholars noted the diffusion model as useful in the decision processes for the adoption of innovation for service improvements (Salman & Hasim, 2011; Smerecnik & Andersen, 2011). The value of diffusion theory in innovation adoption was important for conceptualizing the outcomes of the phenomenon during change implementation in a business setting (Rader, 2012). The diffusion of innovation model was useful in understanding why, how, and when managers should implement innovation as a company's response to competition (Li & Sui, 2011; Seijts & Roberts 2011).

Management Innovative Decision

The strategic decision to use innovation or new technology to streamline business processes was the telecom managers' duties (Perez-Arostegui, Benitez-Amado, & Tamayo-Torres, 2012). Management innovative decisions included the determinations of managers to use innovation to support initiatives for the employees, and allocate resources in response to business problems. Included in these initiatives were a manager's responsibilities to create a service climate supportive of employees' roles to improve customer service (Jia & Reich, 2011).

Managers minimized business failures by using innovation-based decisions to achieve sustainability, increased productivity and competitive advantages (McKenzie, van Winkelen, & Grewal, 2011). Malyshev, Piyavsky, and Piyavsky (2010) discussed innovation-based decision as general practices that managers and employees applied when addressing business problems. According to Bordum (2010) researchers' illustrated

related change management models used in value creation. Tasks included managing employees' levels of creativity through purposeful and well-defined change processes (Malyshev et al., 2010). The creativeness of service-center employees included the use computer skills to manage technological upgrades and to respond to customers' problems (Gobble, 2012). From the service perspective, employees' creativity flourished in an environment for handling service-oriented responsibilities (Jia & Reich, 2011).

Regarding management decisions in relation to the role of innovation in achieving organizational success, Holtzman (2014) as well as Kraus, Pohjola, and Koponen (2012) rationalized economic gain as the reason managers made innovative decisions. In demonstrating how the management innovative decision process influenced the actions of employees in an organization undergoing change, McKenzie et al. (2011) argued the implemented change must create a positive result for the users and the business. Gains accruable from using innovative technology, including improved services, higher productivity (Carmeli et al., 2011; Polykalas et al., 2012), and the concomitant improvement of employees' technical skills (Buarki, Hepworth & Murray, 2011; Gandolfi & Hansson, 2011) were evident in the literature.

Innovation Failures in Telecom Service Centers

Lendel and Varmus (2012) reported that the technologically based innovation remained the most frequently analyzed business activity, because of uncertainties using an introduced technology. Likewise, Shengbin and Bo (2011) acknowledged the uncertainties and the benefits of innovation in service industries, but differed from the views of Lendel and Varmus. According to Shengbin and Bo, innovation was an

idealistic option for addressing business problems. The use of innovation by managers created opportunities for enhanced operational efficiency and increased business success (Rader, 2012), but the implementation of innovation in a technologically-based workplace had significantly negative effects on individuals, teams, and organizational dynamics. Reinforcing the findings echoed by Radar (2012), Vicente-Lorente and Zúñiga-Vicente (2012) recognized downsizing of employees as a negative result usually attributed to the adoption of innovation.

Vicente-Lorente and Zúñiga-Vicente (2012) reported that the downsizing of employees because of implemented innovation affected the *survivors'* attitudes and performance behaviors in the workplace (p. 384). The survivors exhibited attitudes such as resentment, disloyalty to management, lack of commitment, and attrition of experienced employees to competitors (Guo & Giacobbe-Miller, 2012; Lakshman, Ramaswami, Alas, Kabongo, & Rajendran Pandian, 2014; Waraich & Bhardwaj, 2012). The displacement of experienced and well-trained employees by implemented innovative technology connoted exit of organizational memory; Sitlington and Marshall (2011) found displacement was disadvantageous for meeting the success goals of the company. The retention of knowledge to manage technologically-based businesses remained a strategic factor in defining business success (Sitlington & Marshall, 2011). The loss of employees with expert information had a negative impact on the flow of information and creativity (McKenzie et al., 2011).

Sitlington and Marshall (2011) acknowledged that downsizing of the skilled workforce was counterproductive to managing experienced and highly trained

workforces. The exit of highly skilled employees from the workplace signified loss of technical knowledge that is not transferrable (Gong & Greenwood, 2012). Employees served as information repositories as well as subject-matter experts who were capable of promoting workplace efficiency. Shahmandy, Abu, and Akmar (2012) indicated employees' creativity and support in reengineering and mentoring other employees remained crucial when using innovation. Oluwole (2011) noted that losing highly trained employees exemplified the hidden financial losses because of the burden of training employees on advanced technologies. Gandolfi and Hansson (2011) opined that, in relation to the financial loss associated with the attrition of highly trained employees, the loss of experienced employees expose companies to service vulnerabilities including the employee defection to rival competitors.

Telecom companies were highly competitive and capital-intensive businesses, and managers typically downsized employee bases as a ploy to achieve short-term savings of operational costs (Magán-Díaz & Céspedes-Lorente, 2012). Given the savings accruable from using fewer employees to manage business problems in the service centers, Iverson and Zatzick (2011) argued that increased turnover motivated employees to seek employment elsewhere. People sought employment in other companies known for appreciating or desiring the employees' technical skills. Notwithstanding the positive or negative results of employee downsizing, Rogers (2003) recommended managers should recognize individuals' feelings and the unintended consequences of the innovation of new technologies before adopting them in a business setting.

Strategic Management and System Thinking

Kemeny (2011) described system theory (ST) as a useful concept for explaining how objects affect one another within an environment. An example of the ST could be an organization with different structures, business processes, and people working together to achieve a goal (Kemeny, 2011). Latham (2012) used the natural ecosystem where the elements like water, air, plants, and animals interact for survival to illustrate ST. From the ST perceptive, each part of the system depends on the survival of the other parts; therefore, Roche and Teague (2012) found ST useful for analyzing and resolving problems from a fragment of a whole system. Using the cause-and-effect approach, Thygesen (2012) noted that responding to or resolving problems affecting a part of the system may cause unintended consequences to the other parts of the system. Dawidowicz (2012) explained ST that was consistent with Thygesen's (2012) research. Thygesen assumed a holistic approach in describing the relationship between each component in the system.

The roles of employees in implementing innovation, change management processes, and management support were interrelated and relevant in the study of ST relative to technological change. While addressing the strategic role of employees in an organizational setting, Borges (2013) contended that employees, as part of a larger organization, created the technical knowledge used by other members of the same company. In another study, Taneja, Pryor, Humphreys, and Singleton (2013) associated management practices with employee performance, especially when managers used innovation to improve service and products. Roche and Teague (2012) acknowledged the

linkage between management practices and employee performance, and advised managers to apply the concept of system thinking in the review of processes, problems, and mitigation strategies.

The idea of ST applies to different disciplines in management and behavioral research (Dawidowicz, 2012). Kemeny (2011) used ST to explain the role of strategic management in achieving competitive advantage; interrelated organizations such as sales, marketing, network services, and management play significant roles in the systematic introduction of new technology. Thygesen (2012) explained the paramount importance of ST and the application to varieties of experiences, perceptions, theories, ideas, and concepts. Dawidowicz (2012) recommended the use of ST in behavioral research to explain multi-faceted, complex linkages between technology, employees, and leadership in organizations.

Managing and delivering telecom services involves the use of complex attributes. Janiesch, Matzner, and Müller (2012) suggested managers should embrace ST as a holistic approach for understanding the dynamic business processes that include technology, people, processes, systems, and strategy. Janiesch et al. (2012) included the management role as a motivator to employees and discussed a holistic approach to achieving organizational goals. Using a similar approach to examine management responses to unpredictable innovation outcomes, Taneja et al. (2013) stressed that managers must understand the significance of employees' motivations in the context of managing uncertainties caused by the adoption of innovation. Adding to this debate, Thygesen (2012) recommended that a manager's appreciation of the uncertainties in

moderating employees' attitudes introduced new considerations for positively stimulating business practitioners, organizational leadership, other managers, and promoted academic inquiry for understanding transformation objectives.

The prominent biologist Ludwig von Bertalanffy introduced the general systems theory to describe the interactions and relationships between components in a system (Azderska & Jerman-blazic, 2013). Using the values of input and output within an organization, especially where two sets of activities (closed and open systems) exist in a system, Kemeny (2011) described the closed system as the internal interaction between the input and output activities within a group without effecting the performance of the larger system. The open system encompassed the input and output activities affecting the whole system (Kemeny, 2011). The interactions between innovation climate, employees' levels of commitment, and the management of the unexpected consequences of the innovative potentials of businesses were good examples of the general system (McKinney, 2011; van Lier & Hardjono, 2011; Xia, 2012).

Gilstrap (2013) used systems theory to offer a plausible explanation for feedback, self-regulation, and interdependence of variables used by scholars to manage the complexity of a system. Van Lier (2013) considered technology an open system because of the capabilities to transform innovation climate, organizational commitment, and group dynamics. Bardhan, Demirkan, Kannan, Kauffman, and Sougstad (2010) found ST to be a useful model for evaluting technological innovation, but cautioned that external forces such as government regulations and the industry environment could limit the use of innovation on a competitive basis. Azderska and Jerman-blazic (2013) summarized the

importance of ST by emphasizing all aspects of a system, good for building collaborative innovation climates such as the telecom service centers.

Organizational and Transformational Leadership

In distinguishing the role of management from the responsibilities of organizational leadership, Lian and Tui (2012) defined leadership in the context of personal power to influence workers in getting work done. In an organization undergoing innovative change, leadership roles included the identification and removal of barriers impeding success from effective change (Lian & Tui, 2012). Leadership relationship had a profound effect on employees' performance levels, especially in articulating an organization's desire to achieve the results by creating participatory opportunities for employees (Lian & Tui, 2012). A participatory opportunity for employees created an environment of creativity that supported employee-oriented leadership practices as exemplified in the telecom service centers. Dimaculangan and Aguiling (2012) described the employee-oriented leadership as charismatic servant leadership with a strong personal trait to lead innovative change. The ability to lead an organization by building employees' levels of trust, motivation, and commitment to achieve organizational goals remained an attribute in this leadership style (Dimaculangan & Aguiling, 2012).

Despite the use of innovation to streamline business processes, Sut and Perry (2011) reported that the low morale and distrustful relationship among and between employers and employees were common causes of innovation failures, especially when employees were apprehensive about negative outcomes of using new technology (Mellahi & Wilkinson, 2010). The key challenges facing business leaders who manage innovation

at organizational levels included the lack of knowledge of how to reduce failures or how to make innovation significant to the business and the employees (Margherita & Petti, 2010). Organizational leaders must reduce the risks associated with excessive focus on technology by providing managers meaningful practices that motivate employees to achieve the successful implementation of innovation (Grant, 2012).

Workplace transformation resulting from the use of innovative practices prompts businesses to embrace experienced leaders who offer the knowledge of the business and ability to lead change effort. Warrick (2011) described transformational leadership as an approach that offered governance skills to bring about significant positive changes in individuals, groups, teams, and organizations to set a business on a new course. Tipu, Ryan, and Fantazy (2012) agreed with Warrick (2011) and further argued that transformational leadership style affected the employees through the idea of self-concept attached to the company's goals; transforming individual values pertained to the influence of self-confidence in relation to the support of an organization.

A drive for strategic corporate vision that promoted result-oriented changes across organizations remained an important leadership attribute in a business environment (Gupta, 2013; Leavy, 2011). The goals of transformational leaders included motivating followers to achieve significant results and removing roadblocks to organizational successes (Marshall, 2010). The technological transformation of the telecommunication sector led to improved socio-economic development in the United States. This example illustrated how in a result-oriented organization, leadership roles could transform the business goals (Warrick, 2011).

Dimaculangan and Aguiling (2012) emphasized that articulation of vision promoted business goals; the articulation of vision motivated the employees through the stimulation of personal and intellectual capital and was a major characteristic of a transformational leader in technological settings. The line managers held a lesser role in articulating the company's vision because of delegated responsibilities to pursue the transformational purpose of the organization (Dimaculangan & Aguiling, 2012). Transformational leaders needed charisma to manage conflicts between the goals in leading effective change and the teams who would affect the change. Leaders had to balance these conflicts with employees' motivation to support new technological practices (Baird & Wang, 2010). In analyzing the results of a manager's positional power in implementing innovation, Reiner (2011) acknowledged the occurrence of innovation failure because of undefined functions between business leaders and responsibilities of managers. The lack of coherence between the role of the managers and organizational leadership brought about conflict between individuals in the social system and led to undesirable results, especially when innovation lacked a defined ownership process (Rogers, 2003).

Euchner (2013) described change management as harmonizing organizational or enterprise-wide activities or practices used to achieve significant results. These activities, in relation to the introduction of innovation in workplace, included the change selection criteria, identification of innovation and resources, management of the introduction and implementation, and reporting of the outcome of the results (Ashurst & Hodges, 2010). Technological changes were essential to organizational goals and unsuccessful

management of change remains a major problem for businesses (Ashurst & Hodges, 2010), especially when the adopted innovation hindered the service-oriented culture of the company (Yamakawa, Noriega, Linares, & Ramírez, 2012). In their reflection of service-oriented businesses like telecom service centers, Ashurst and Hodges (2010) argued the speed of change in the industry increased the need for change management practices that were critical in the implementation of innovation and were essential to the survival of telecom businesses.

The change selection criteria for the introduction of innovation in telecom service centers included the need for service improvements, enhanced customers experiences, and appropriate resource availability to implement or support the businesses (Helmi, Boly, & Morel-Guimaraes, 2011). The focus on change selection criteria limited managers to the evaluation of factors likely to affect the use of introduced technology; Gandolfi and Hansson (2011) identified those factors as rejection, apprehension, and resistance to change. Amiri, Rasaeefard, and Dastan (2011) analyzed change selection criteria applied to telecom management within the context of Levin's force field theory to highlight the role of an agent as critical for mitigating quality issues and company's goals involving technology innovation. Wagner, Morton, Dainty, and Burns (2011) described force field analysis as a tool for diagnosing barriers. The tool pertained to enabling technological change involving managers of technological intense environments who could use employees with strong technological expertise to implement and support innovation effectively.

Helmi et al. (2011) emphasized the increased participation of managers in

technological changes as well as the selection criteria used in deploying innovation. Likewise, Gandolfi and Hansson (2011) stressed the role of managers in the final approval of the selection criteria. Gandolfi and Hansson found managers often neglected the change process focused narrowly on the result of the implemented innovation. The change management process involved project identification, resource selection, managing stakeholder's relationship, and managing the change outcomes that were significant in innovating and sustained growth (Elbashir, Collier, & Sutton, 2011). Yamakawa et al. (2012) suggested that firms pursuing technological change should capitalize on the full benefit of change management practices to achieve a successful outcome.

Employees' Motivation and Commitment Practices

Bhaduri and Kumar (2011) described motivation as a complex mental process that aroused and directed an individual's persistent action toward a goal. Strategic leaders in successful companies and organizations used motivation to control and support employees' goal-directed behaviors (Mayfield & Mayfield, 2012). The indispensable value of motivating employees included the creation of an environment for achieving optimal performance and increased productivity (Mayfield & Mayfield, 2012). Bhaduri and Kumar (2011), and Seijts and Roberts (2011) noted that innovative behaviors of employees in a technological setting occurred through intrinsic motivations or by a combination of intrinsic and extrinsic motivations. Motivational techniques commonly used and relevant to management practices in workplaces included wage increases, incentives, recognitions, trainings, promotions to promote job satisfaction (Coelho, Augusto, & Lages, 2011).

Motivation of employees. There was an absence of creativity and participation among employees in un-motivating work environments; this problem occurred when employees disliked a result associated with the introduced technology (Manzoor, 2012). Cadwallader, Jarvis, Bitner, and Ostrom (2010) acknowledged the issues associated with un-motivating environments and recommended that managers use opportunities accrued from the introduction of innovation as motivational strategies for advancing employees' careers (Muhammad-Ikhlas, 2012). Cadwallader et al. (2010) used the self-deterministic theory (SDT) as a context to describe individuals' capabilities to stay motivated toward a particular purpose. These capabilities of employees included (a) attraction to learn innovation, (b) role in disseminating the innovation by recommending it to others, and (c) involvement using the technology to solve business-related problems (Cadwallader et al., 2010).

The type and nature of the business, the business environment, and workforce skill level were important factors in managing employee motivation (Jorfi, Jorfi, Yaccob, & Shah, 2011). Employees with technical expertise were typically the first members of an organization to embrace innovation; as the earliest adopters, technical employees were the ones who shared acquired knowledge (Lee, 2010). Jia and Reich's (2011) discussion of motivation included claims that employees' perceptions were shaped by (a) how businesses operate, (b) managers' goals, (c) necessary terms of performance, (d) organizational rewards and support systems, and (e) by expectations. Ramlall (2012) concurred with Jia and Reich's findings, adding that perceived low motivation among employees may be linked to undermined trust, lack of commitment to support innovation,

and could contribute to a hostile environment between the employees and managers. The adoption of innovation could create unintended consequences like employees' diminished collaborative behaviors and destruction of trust in the workplace (Huang, Chen, & Han, 2011).

Although Baird and Wang (2010) linked employees' performance to management motivation strategies, Huang et al. (2011) argued that corrosion of interpersonal trust between employees and management affected the free flow of ideas within organizations and organizational teams. Similarly, Ramlall (2012) showed the vulnerabilities to technological failure when employees lacked motivation; distrustful relationships evolved between team members and managers. Ertürk (2012) recommended that managers who were leading technological change must establish trust and motivate teams of employees to be creative in managing innovative changes. Team building and collaboration created opportunities for shared responsibilities between the employees and managers (Bhaduri & Kumar, 2011). Team building included the exchange of technical information, ideas, skills transfer, and workforce training on the acquired technology used in transforming the methods for developing information technology (Hendrickson & Andersen, 2010).

Bhaduri and Kumar (2011) discussed the use of extrinsic motivators by managers to achieve set objectives. Extrinsic motivators included career promotions, salary increases, bonuses, and coveted intergroup transfers that influenced individuals' innovative behaviors (Bhaduri & Kumar, 2011). Managers used extrinsic motivators to (a) inspire or motivate teams, (b) moderate behavior-directed responsibility, (c) reward employees, (d) discipline employees, (e) encourage competition between individuals and

teams, and (f) promote or evoke employees' interests in new processes (Pepe, 2010). Chong, Ooi, Chan, and Darmawan (2011) acknowledged the benefits of extrinsic motivation as stated by Pepe (2010), but differed in the views that extrinsic motivation flourished in workplaces where employees had protection from vulnerabilities of implemented innovation. The vulnerability of employees to the negative outcomes of innovation created an atmosphere of humiliation and rejections that could interfere with business regeneration and sustainability (Stasishyn & Ivanov, 2013).

Krot and Lewicka (2012) identified trust as a critical element needed in the introduction of innovation, and stressed the building of employees' relationships to support managed outcomes of implemented innovation. Ceri-Booms (2010) defined trust as a mental model of relationships based on life experience and relationships between people in achieving a goal. Dovey (2009) explained trust as a critical social capital resource for transforming ideas into successful products or services, but went further to acknowledge the importance of trust in creating favorable conditions for implementing innovation. Dimaculangan and Aguiling (2012) explained trust in terms of *intellectual stimulation* or the level of belief that followers' grant leadership. Krot and Lewicka (2012) discussed the importance of managing workers' expectations in different organizational settings. They recommended that managers build trust-based relationships as strategies for managing and moderating employees' expectations in change-oriented environments (Krot & Lewicka, 2012). The probability of innovation to be successful depended on the environment; creation of mutual value, development of trust, and nurturance of strong inter-organizational relationships were critical to the survival of the

business (Fuchs, 2011; Semercioöz et al., 2011; Westergren, 2011). The lack of trust in a workplace inhibited cooperation between employees and managers and jeopardized the successful use of innovation (Semercioöz et al., 2011).

In assessing the value of the trust at the enterprise level while focusing on employees' perceptions, Lukas and Schöndube (2012) used the concept of agency theory to explain the importance of trust in the relationships to managers' decision-making roles and employees' behaviors. Kagaari (2011) also noted the relationship between management decision-making and employees' behaviors expressed by Lukas and Schöndube (2012). Kagari (2011) emphasized the result of personal disposition and differences in relation to trust between an agent and principal as exemplified in employees' interests and attitudes towards managing risks. Furthermore, Kagaari (2011) explained that from a resource-based view of theory of agencies, the reliance on trust portrayed in a firm showed that the business environments are more volatile and unpredictable, forcing companies to trust intellectual capital of the employees for survival (Su, 2014).

Motivated employees relied on the trust relationships existing within teams; collaboration led to the use of acquired and shared technical expertise to enhance service quality initiatives rather than sabotage a company's strategic interests (Mahajan, Bishop, & Scott, 2012). Employees also trusted the organization and its managers to protect or safeguard workers' interests beyond those of the business (Farndale, Hope-Hailey, & Kelliher, 2011). Regarding strategies that managers might employ to build trust relations with their employees, Dovey (2009) recommended companies should embrace trust as a

driver for furthering business strategies, promoting commitment, and building relationships that could enhance individual-specific goals (Farndale et al., 2011).

Commitment of employees. Companies' leaders manage technology effectively when employees feel empowered and committed to embracing new skills to support the implemented technology (Baird & Wang, 2010). Yücel (2012) noted employees' commitments were important factors for organizational success and development, and employees' empowerments contributed to higher levels of job satisfaction and business benefits (Jia & Reich, 2011). In technologically-based business environments, employees' levels of commitment to executing assigned daily functions were dependent on factors like perceived job satisfaction, resistance to innovation, and adaptability to an introduced change (Jia & Reich, 2011).

Employees' levels of commitment, with respect to embracing innovation, depended on the skills, technical expertise, and exposure to the experiences in the work environment. Company leaders relied on individuals' technical skills for managing complex technologies (Fan-Yun, Tsu-Ming, & Kai-I, 2012). Regarding the levels of employees' technical skills in IT-based service centers, Fan-Yun et al. (2012) claimed employees who were subject-matter experts in information systems management or computer science related fields received training on costly emerging technologies regularly. Managers who focused on meeting business challenges using innovation manned by well-trained employees, invested resources to train, hire, and pay these IT employees (Fan-Yun et al., 2012). The costs of maintaining an experienced professional occurred frequently were significant and were financial burdens for telecom managers.

From a cost perspective, downsizing of these highly skilled employees to realize cost savings for the implementation of innovation may have been a strategic quest to lower operational costs, but this calculated risk created an environment of an uncommitted workforce (Bairi, Manohar, & Kundu, 2011).

Business adoption of innovation required managers to train employees on new, complicated, computerized systems that could challenge the levels of commitment of employees. An employee's commitment to adopt and support innovation also depended on the conduciveness of the environment or the climate permitting innovation practices (Wang & Hsieh, 2012). In addressing the environmental effect on employees' levels of commitment, Wang and Hsieh (2012) recognized how organization-climates affected employees' levels of job satisfaction. Employees displayed lower commitment levels when they perceived innovation as disruptive to self-interest or as detracting from their wellbeing (Wang & Hsieh, 2012). Hsieh et al. (2012) utilized the service profit chain (SPC) model to describe employees' levels of commitment to support innovation for meeting customers' expectations. Hsieh et al. (2012) used the model to show the linkage between employees' performance levels, service quality, personal motivations, and commitments to assigned work tasks.

Older employees reported experiencing stress when pushed to undertake training or make a career change involving complex technology (Meyer, 2010). Nodeson, Beleya, Raman, and Ramendran (2012) and van Den Broek and Dundon (2012) reported the occurrences of stress among older workers in fast-paced, technological environments. Becker, Fleming, and Keijsers (2012) claimed older employees undergo stress or

experience fear in association with learning new skills. Older employees who exhibited resistance to change became targets for downsizing. Dae-seok, Gold, and Kim (2012) described feelings of uncertainty related to job security among older employees and urged practitioners to build career development strategies to reduce the effect of employment adjustments on this group. Ahituv and Zeira (2011) addressed the value of career development for older employees in a technologically-based environment, and reported that transitioning from one career to another should be accomplished in ways that reduce stress and uncertainty that affects employees' levels of job commitment and job satisfaction.

Pala, Edum-Fotwe, Ruikar, Doughty, and Peters (2014) acknowledged the importance of innovation but noted the inconsistency in the view of technological change as panacea to all business problems. Maintaining business growth and continuity without disrupting the employees' commitment in an innovation-driven company remains a concern to business leaders (Jablokow, Jablokow, & Seasock, 2010). The relationship between the strategic use of innovation to create organizational value and employee's wrongful perception for its implementation tended to affect motivation and commitment levels (Rob, Curseu, Vermeulen, Geurts, & Gibcus, 2011). The lack of management options to address the ambiguous relationship between adopting innovation and employees' levels of commitment has the potential to heighten employees' negative attitudes toward supporting organizational goals (Gandolfi & Hansson, 2011). The heightened negative attitudes among the employees toward adopting innovation exacerbated the possibilities of degrading services and acts of sabotage in service centers

(Patterson & Baron, 2010).

Job satisfaction was a vital factor influencing employees' levels of dedication and commitment to the support of organizational goals (Dhammika, Ahmad, & Sam, 2012; Lau, 2012; Mohsin & Muhammad, 2011; Yücel, 2012). Shun-Hsing (2012) defined job satisfaction as the overall sense of devotion an employee had for a business situation. Shun-Hsing suggested that managers should engage strategies to develop and improve employees' motivations. De Menezes (2012) presented a view of job satisfaction that reflected an important dimension of employee well-being, confirming that job satisfaction was a desired indicator of organizational success. A happy employee tended to show significant dedication, higher commitment, and employment longevity because of the perceived benefits accruable (Yücel, 2012). Addressing the value of an employee's commitment to quality service delivery in the industry, Litwin (2011) advised managers to ensure effective use of innovation as a platform to increase job satisfaction and service efficiency, especially for creative employees with the technical skills to support innovation (Buarki et al., 2011).

Resistance to change. An employee's resistance to innovation materialized in conflicts with organizational service goals; therefore, resistance could result in potential business failures (Turban et al., 2011). Within the context of employees' perceptions, Peccei, Giangreco, and Sebastiano (2011) illustrated resistance as the behavior preceding conflict or as a person's attitudinal objection to an event. The employees' acts of resistance to innovation often manifested from the negative responses associated with poor perceptions of the effect of implemented innovation on individuals' careers or states

of wellbeing (Agboola & Salawu, 2011). The resistance to implementing innovation could affect an employee's motivation and exacerbate an environment conducive to confrontation (Alireza, Ali, & Aram, 2011).

Employee knowledge. Mciver, Lengnick-Hall, Lengnick-Hall, and Ramachandran (2013) described knowledge management as the knowledge-in-practice framework characterized by tacitness and learnability in a work practice. Mehrabani and Shajari (2012) studied the role of knowledge management in affecting change and noted information transfers were significant factors in the implementation and use of innovation. The transfer of technological knowledge occurred by an employee's socialization with another in a given work environment by sharing of tacit knowledge (Hsin-Mei, Peng-Jung, I-Fan, & Yi-Tien, 2013). Knowledge transfer and knowledge retention were important with respect to the creative abilities of the employees; the deliberate hoarding of technological knowledge affected productivity (Gupta et al., 2012).

Hoarding and disruption of innovation knowledge management remained the most commonly used resistive strategy employees adopted in retaliation to management's institution of innovation. Hoarding of information could affect overall productivity and resource support for innovation that were critical for achieving competitive advantages (Almahamid et al., 2010; Mackay & Chia, 2013; Morteza, Shafiezadeh, & Mohammadi, 2011; Yang, 2011). When an employee's negative perceptions resulted in the hoarding of technical information, there were shifts in teams dynamics that increased the likelihood of inefficiency and poor organizational performance (Li-An, 2011; Marciniak &

Clergeau, 2011; Prindle, 2012).

Regarding the strategic importance of knowledge transfer in technological change, Mciver et al. (2013) proposed that managers match the tacitness and learnability of employees to support positive results and to meet business performance targets. Grant (2013) evaluated managers' options to moderate employees' resistive attitudes and recommended the use of flexible intra-organization communication as a platform to create a desirable mechanism of knowledge transfer. Hsin-Mei et al. (2013) advised managerial adoption of practices that promoted sharing of technological knowledge in the workplace.

Self-Determination Theory (SDT) and Motivation

Achakul and Yolles (2013) characterized motivation as a thought pattern that stimulates an individual's behavior. Deci and Ryan (2000) originally developed the self-determination theory (SDT) as a theoretical framework of motivation. Wang and Zheng (2012) reported that SDT was useful for evaluating motivation as an autonomy continuum or perceived locus of causality, thereby laying emphasis on the self-induced necessity for achieving satisfaction in relation to an assigned role or work. Vallerand and Lalande (2011) study on model of intrinsic and extrinsic motivation used two categories of motivation to explain the SDT model, (a) intrinsic motivation resulting from self-influenced actions, and (b) extrinsic motivation controlled through external stimuli. The theory illustrated motivation as a set of extrinsic and intrinsic motivational elements. Self-actualization of needs for autonomy, competence, and relatedness were three basic psychological needs for human development that influenced performance in an

organizational setting (Kovjanic, Schuh, Jonas, Quaquebeke, & Dick, 2012).

Intrinsic motivation. Gerow, Ayyagari, Thatcher, and Roth (2013), as well as Yidong and Xinxin (2013) explained intrinsic motivation as inclusive of the expectations of personal rewards for engaging in a job. These expectations were voluntary or self-directed aims toward desired goals (Bhaduri & Kumar, 2011). Abuhamdeh and Csikszentmihalyi (2012) described the concepts of intrinsic motivation as a self-initiated personal interest or pleasure gained from performing a duty. Intrinsically motivated behavior stemmed from an individual's self-driven ability towards a goal while extrinsically motivated behavior resulted from external incentives (Pope-Ruark, Ransbury, Brady, & Fishman, 2014; Roberts, Hughes, & Kertbo, 2014; Yung-Ming, 2012). Bhaduri and Kumar (2011) showed employees' motivation to become adopters of innovation changes when they desired to acquire relative skills to support the organizational goal.

Intrinsic, motivational attitudes stemmed from the value an individual attached to a practice (Vallerand, 2012), and encompassed the emotional state or attitude the person derived by being engaged in the work (Frye, 2012). Sheldon and Schüler (2011) proffered an example of intrinsic motivation as circumstances whereby an individual adopted a practice and took full responsibility for the practice because of the values attached to it. The motivation of employees remained a significant factor in building the individual-organizational relationship in an environment wherein employees were involved emotionally and satisfied with the introduced innovation (Galletta, Portoghese, & Battistelli, 2011). Ke, Tan, Sia, and Wei (2012) acknowledged the significance of

motivating employees. Likewise, Portoghese, and Battistelli (2011) recognized the importance of a motivated workforce but also argued that intrinsic motivation became more superlative when personal interests to succeed with little or no incentive overshadowed extrinsic motivational incentives.

The description of cognitive growth by using cognitive evaluation theory, a sub-theory of SDT, was useful for rationalizing intrinsic motivation on this basis of social and environmental factors (Wang & Zheng, 2012). Sheldon and Schüler (2011) studied the motivation of employees and found a positive relationship between rewards and employees' competences. Employees had greater levels of intrinsic motivation in an environment with a higher level of autonomy. A manager who promoted this type of environment was supportive of the moderation of self-determined behavior (Sheldon & Schüler, 2011). In demonstrating, the instinctive attribute of intrinsic motivation in a person, Sheldon and Schüler (2011) noted the trait of inborn initiative to take on new opportunities and prospects as part of an individual's cognitive and social growth. Van den Broeck et al. (2011) viewed an employee's intrinsic motivation in relation to career and job security. In workplaces or companies where employees had a sense of individual role security in creating value for the business, levels of productivity and creativity flourished because of self-motivations (Van den Broeck et al., 2011).

Extrinsic motivation. Frye (2012) defined extrinsic job satisfaction as the emotional state resulting from the rewards attached to work that organization, peers, or superiors regulate. The SDT framework exemplified extrinsic motivation as the ability of an employee to adopt a practice without taking ownership of it. External sources

(incentives or rewards) controlled or supported extrinsic or regulated motivators, according to Kim, Shim, and Ahn (2011). The effects of incentives or rewards on individual and group motivational behaviors exemplify the importance of extrinsic motivation as a topic in management research (Rosenblatt, 2011). Incentives are important tools used by managers to regulate or internalize the competences of the adopters (Dahl & Smimou, 2011).

There were four different practices were effective for identifying of extrinsic motivation in the context of relative autonomy. *Externally regulated behavior* referred to extrinsic motivation with the least autonomy; this occurred when an individual performed a job because of external demand and the possibilities of reward (Minbaeva, Mäkelä, & Rabbiosi, 2012, p. 391). *Introjected regulation of behavior* occurred by extrinsic motivation grounded on personal contingencies such as self-esteem or personal ego (Doron, Stephan, Maiano, & Le Scanff, 2011, p. 99). Managers allowed an employee to accept innovation or practice without taking the full ownership of the process. Under this circumstance, individuals could feel motivated to exhibit the aptitude to uphold self-worth. Doron et al. (2011, p. 89) explained the third practice of *regulation through identification* as independently-driven extrinsic motivation that occurred when an employee accepted a task because of the value attached to practice. The last practice of the extrinsic motivation was the *integrated regulation***,** refers to the autonomous type of extrinsic motivation that occurred when regulations were completely absorbed in conjunction with an individual's attitude and personal desire (Vallerand, 2012, p. 44). This type of extrinsic motivation originated from self-desire, rather than personal interest

in the practice.

Fernet, Austin, and Vallerand (2012) noted that competent and qualified employees were attracted to work environments conducive to sustain employees' motivations. Frye (2012) research on job satisfaction based on general motivational factors, conceptualized job satisfaction to include extrinsic, intrinsic, and general satisfaction. Frye characterized job satisfaction as an emotional state resulting from the assessment of one's job or job experiences developed by motivational factors. The SDT framework reinforced the importance of creating a highly motivated workplace safe for development of an employee's performance and creativity (Leonard, 2013).

Themes Emerging from Literature Review

Ibrahim (2010) studied a group of competitive priorities frequently used by managers to support organizational sustainability, service innovation, and performance. Addressing the prioritizing of these strategic capabilities, Ibrahim (2010) noted a relationship between managers' use of innovation to create value and the resulting behavior of employees. The need to understand the relationships between the deployments of innovation, employees' levels of support for creativity and innovation, and employees' behaviors remained (Seijts & Roberts, 2011) and represented the original question posed in this research. Improved understanding of the direct result of innovation on performance management and service quality requires additional inquiry (Cocks, 2012; Gallagher, Worrell, & Mason, 2012). The use of the diffusion theoretical framework could increase the theoretical understanding related to the adoption of innovation and management of the consequences (Busse & Carl, 2011; Lacity, Khan,

Yan, & Willcocks, 2010). Understanding these strategies allowed managers to apply technological solutions to improve efficiency and enhance employees' levels of commitment (Hazen, Overstreet, & Cegielski, 2012; Rojko, Lesjak, & Vehovar, 2011).

The adoption of innovation and the use of advanced technology in the service centers were relevant business concerns that affected organizational transformation, culture, and performance (Banerjee, Nagar, & Mukherjea, 2013). Despite the competitive pressure that forced managers to embrace innovation as an option to run more efficiently (Kaul, 2012), the use of technology by employees offered attractive options to meet an organization's operational goals. Seijts and Roberts (2011) found that an individual level of content for a successful outcome of implemented innovation increased organizational satisfaction. Boichuk and Menguc (2013) acknowledged that individual levels of content and organizational satisfaction, as reported by Seijts and Roberts (2011) were important, but argued that an employee's lack of commitment to support innovation and the related dissatisfaction caused insecurity that manifested as resistance to innovation. Burchell (2011) found employees' levels of commitment and satisfaction to adopt the innovation were consistent with the findings of Nodeson et al. (2012) which showed the presence of apprehension among employees when an implemented innovation affected wellbeing.

Agboola and Salawu (2011) found that different levels of uncertainties occurred when managers introduced innovations in organizations. Likewise, Alabi (2012) found that different levels of uncertainties occurred but noted that an employee's level of understanding concerning adopting and supporting innovation contradicted the management purpose as stated by Agboola and Salawu (2011). Alabi (2012) contended

that an organizational change involving the introduction of innovation could cause adverse effects when conflicts in roles and purpose exist.

Literature review of research method and design. The identified variables and the relevant management theory were important factors in examining the relationships between support for creativity and innovation, tolerance for change, organizational commitment to support innovation, and employees' levels of motivation in telecom service centers. Diffusion of innovation theory (DOI) was a relevant theoretical framework in this study, because the study's focus was on technological adoption in business settings. The application of the theory in this research included using the related innovation instruments in data collection processes and data analysis approaches (Li-An, 2011). The survey instruments for data collection included easy and convenient online mechanisms that respondents could use to answer the questions (Axinn, Link, & Groves, 2011; Li-An, 2011). In this study, research participants received e-mail invitations through an online survey tool that offered security and ease of online data collection and entry (Baltar & Brunet, 2012; Comley & Beaumont, 2011). Fluidsurveys ™ (www.fluidsurveys.com) had inbuilt capabilities for multiple-choice questions, rating scales, drop-down menus, and open-ended queries that allowed users to develop surveys, collect responses, and analyze survey results (Maxymuk, 2009).

The research participants were employees of large telecom companies with service centers in metropolises in the United States. Organizational environments, structures, participants' roles, cultures, innovation climates, management performance, and employees' levels of satisfaction were factors that had the potential to cause

dissimilarities in participants' responses to the questionnaires (Carlsen & Glenton, 2012; Kieruj & Moors, 2013).

Ethical concerns in relation to the role of the participants were an important aspect of conducting academic and acceptable research (Johnson, 2014). The participants in the study were volunteers with no coercion or incentives for participating (Tyldum, 2012). Research participants could object or withdraw from the study at any stage (before, during, or after data collection) without approval from the researcher. Adherence to ethical considerations remained critical in protecting confidentiality, trust, inclusion, and relationship building between participants and the researcher (Allen, Ball, & Smith, 2011).

The design of the survey included Likert summative rating scale widely used in measuring attitudes pertaining to specific events (Edmondson, Edwards, & Boyer, 2012). After uploading the data collected from the study respondents into the Statistical Package for Social Science (SPSS), I began the data analysis phase to test the relationships between variables. Brezavscek, Sparl, and Znidarsic (2014) described SPSS as an appropriate tool for conducting statistical analysis and testing consistencies of the variables in quantitative research.

Importance of innovation research. The use of advanced computer information systems by service-oriented companies transformed organizational-based solutions for maintaining competitive advantages by adding value to the customer preferences (Lollar, Beheshti, & Whitlow, 2010). Telecommunication companies in the United States were the prime examples where operational efficiencies were dependent on the integration of

innovative business strategies with advanced computer systems to create desirable outcomes for businesses (Mashaw & Pefkaros, 2013). Efficient use of innovation leads to maximization of cost-effectiveness in human resources, equipment, facilities maintenance, and return on capital investments (Shahraki, 2012). Efficiency outcomes in a telecom service center might include the use of technology to lower costs of operations, improve service quality, and achieve financial gains (Lollar et al., 2010).

The implementation of advanced computer systems in a telecom service center offers management a cost-effective method to streamline business operations and align innovative business strategy with value creation for increasing organizational performance that brings about social change (Cragg & Mills, 2011). The prevalent innovative approach of using automation in a business environment includes the reduction of manual tasks performed by an employee, as exemplified in the telecom industry (Bairi et al., 2011). Weeks (2013) described automation as a technological performance without human involvement. In the telecom service centers, managers implement automation as an innovation to reduce tasks of employees and to achieve optimal efficiency (Weeks, 2013).

Transformational change approaches such as using technology to replace the role of employees could be challenging if the change lacks goal clarification and support from the adopters (Foss & Lindenberg, 2013). The application of strategic management by business leaders and managers in relation to goal setting, creation, identification, and exploitation remains a source for competitive heterogeneity designed for creating value for the business (Kleingeld, van Mierlo, & Arends, 2011). Goal settings and goal

clarifications were important milestones in managing change in settings where management objectives, ambitions, and visions may be ambiguous (Bordum, 2010). While addressing the importance of clarifying goals or purposes relative to the use of innovation, Razi and More (2010) expressed that effective communication decreases the levels of ambiguity and uncertainty, thereby leading to improvement in the recognition processes related to the implementation of innovation. Further elaborating on the significant role of communication in the successful implementation of technology in the workplace, Razi and More (2010) recommended that communication and feedback regarding goals must be clear and effective. The manager's role in a service-oriented environment such as a telecom service center includes the identification of opportunities for clarifying the value of the goal. The manager's role includes providing clear information on the change benefits to the employees and the business and motivating the employees toward achieving a set goal (Raelin & Cataldo, 2011).

The reliance of innovation and organizational performance on organizational trust, connoted a model used for building relationships and managing employees during organizational changes (Knoll & Gill, 2011; Mun, Shin, & Jung, 2011; Schwepker & Good, 2012). In this context, Fahed-Sreih (2012) defined trust as an individual's willingness to accept vulnerability and embrace positive expectations about another's intentions or behaviors. Trust also includes an individual's willingness to ascribe to good intentions by having faith in the words and actions of other people (Fahed-Sreih, 2012). Stasishyn and Ivanov (2013) studied the effect of trust on creation of new ideas and noted the importance of trust in creating a favorable condition for the transformation of new

ideas into innovative products or services. While linking of trust to organizational performance, Darling, Heller, Wilson, and Bennie (2012) discussed organizational trust as necessary in relationship building, and the lack of trusts as detrimental to organizational performance that could create an environment of low motivation and discord between employees and managers.

The moderation of the actions of employees through motivational schemes remains an important factor in companies where innovation plays a significant role in achieving competitive advantages. Cadwallader et al. (2010) advised that managers in technologically oriented environments should seek opportunities to stimulate employees through motivation towards adopting innovation. Management capabilities to stimulate the transformation of innovative ideas into tangible results were dependent on management capabilities, organizational culture, work environments, and competitive factors influencing the actions of employees (Cadwallader et al., 2010). Managers must consider employee motivation as a critical facet of management decision-making process in change management efforts when attempting to create environment that support innovation (Wingwon, 2012).

The role of managers consists of change ownership and managing the change agents responsible for the implementation and adoption of innovation in telecom service centers. Rogers (2003) discussed the role of the change managers in innovation-decision processes concerning, noting that duties should address the results of adopted innovation. Decision-making processes at the individual level pertain to learning the new tools, persuasion, implementation, goal setting, and elimination of barriers at the organizational

level (Reiner, 2011). Goal setting includes focusing on problems caused by the introduction of innovation at organizational levels, while goal setting at employees' levels includes an address of training, job stability, recognition, and career growth.

Ari and Baki (2010) reported that recent innovation researches focused on technological adoption that required the use of new tools, processes, and management practices for reengineering business practices. Low, Chen, and Wu (2011) outlined the effect of innovation on businesses by noting significant factors in the diffusion of innovation including the compatibility of innovation with future adopters, trialability of the technology by the intended users, and the complexities associated with the introduced technology. Lawson-Body, Willoughby, Illia, and Lee (2014) highlighted the importance of the compatibility of innovation with future adopters and found those organizations that adopted complex technological systems without providing a good understanding of the positive usability endured risks such as negative relationships with the adopters. Because of the effect of innovation on organizational development, understanding the context in which managers or organizations' leaders infuse innovation as a response to external threats requires a new orientation on the part of the employees and the businesses (Rader, 2012; Seijts & Roberts, 2011).

Business managers combine service quality, aggressive marketing, and innovative technology to create sustainable business gains in daily telecom operations (Gryczka, 2011; Sur, 2011). The majority of telecom companies operating in the domestic and international arena depend on innovative technologies in order to support service offerings, compete, and retain a global reputation (Gryczka, 2011). The positive

outcomes that managers experienced by using innovation included the interoperability of information systems, alignment of organizational functions with business processes, and the efficient management of resources (Hsing & de Souza, 2012). The managers' abilities to adopt an innovation could be effective in dismantling the barriers inhibiting the growth of business, employees' behaviors, and positive organizational development.

Managers could use innovation to create social change that generates competitive advantages and offers value to the employees. The importance of innovation to social change and an appreciation of innovation in a business setting remain important in innovation research (Bordum, 2010). A thorough search of the literature revealed that managerial expertise respective of innovative changes in telecom technologies as the centerpiece for telecom performance, growth realignment, sustainability, research-driven practices, and the development of the core business processes (Perez-Arostegui et al., 2012).

Transition and Summary

Section 1 included an overview of the correlational quantitative research examining the relationship between support for creativity and innovation, the resistance to change, organizational commitment, and employees' motivation in telecom service centers. I presented the statement of the problem, nature of the study, research questions, theoretical framework, definitions of terms, and review of the literature. In addition, I included an explanation of the significance of the study, how this study might reduce gaps in the body of research, and the assumptions, limitations, and delimitations that formed the basis of the study. Section 2 includes a detailed analysis of the study

methodology selected for this study, the role of the researcher, the sampling techniques appropriate to the study, data collection, and data analysis.

Section 2: The Project

Section 2 includes the purpose statement, and discussion of the role of the researcher, a description of the study participants, and the appropriateness of the research method and design selected for the study. This section also contains the description of the sampled population, sampling method, data collection process, and data analysis plans for establishing a relationship between constructs in the study. In addition, the section includes an explanation of the instruments and the associated reliability and validity.

Purpose Statement

The purpose of this quantitative correlational design was to examine the relationship between a linear combination of predictor variables and the dependent variable. The predictor variables were support for creativity and innovation, the resistance to change, and organizational commitment. The dependent variable was employees' motivation. The target population included telecom employees who had experiences using computerized technologies in the service centers located in (a) Dallas, Texas, (b) Denver, Colorado, (c) Middletown, New Jersey, and (d) Seattle, Washington. The implications for positive social change included the potential to contribute to the fields associated with telecom businesses, employee management, and those that depend on scholarly research about employees' motivational levels and technological change. The research findings provide telecom business managers strategies for motivating employees in the technology-based setting of a telecom service centers (McDaniel, 2011).

Role of the Researcher

I am an IT professional with more than 14 years of service employment in a leading telecommunication company located in the United States. The industry experience includes quality control and service assurance (5 years), service desk support (2 years), software development support (3 years), and management (5 years). As a Senior Technical Architect in the service center, my responsibilities includes overseeing and managing employees who used computerized systems to support clients' services on a daily basis, leading initiatives associated with the planning for deployment of new technologies, and making decisions for allocation and use of employees to support the deployed technology within the service centers. My roles in this study included the sampling of the participant sampling, setting up of the questionnaires on the survey website, inviting the participants to contribute to the research through e-mail, and collecting responses for data analysis.

Researchers are responsible for providing statements of ethical disclosure to the participants before they (researchers) access the survey questionnaires (Rich, 2011). I remained available to answer and clarify questions through e-mails, and I retrieved the survey responses for data analysis. Bansal and Corley (2012) noted a significant difference in data collection processes between qualitative and quantitative research methods is the dual role of the researcher as a participant when engaging in qualitative study.

The use of a self-administered online survey instruments reduced personal interactions between the researcher and the participants (De Martini, 2011). The purpose

of using the SPSS tool was to conduct data analysis (Green & Salkind, 2011). According to Fisher and Stenner (2011), a researcher should take extra precautions to minimize any bias associated with this research during the data collection process, data organization, data analysis, and data storage procedures (Fisher & Stenner, 2011).

Participants

The participants who I selected in this study were IT employees in supervisory and non-management positions working in telecom service centers located in (a) Dallas, Texas, (b) Denver, Colorado, (c) Middletown, New Jersey, and (d) Seattle, Washington. I used a process to prequalify each of the participants in order to determine inclusion suitability by using their roles as employees or managers, as well as their experiences in implementing or using new technology and innovation to support telecom customer services. The managers' perceptions of innovation encompassed the implementation of technology to meet a company's business goals. Managers' perceptions differed from those of the non-management employees who perceived the use of technology pertained to addressing customers' service concerns. The sampling of the participants occurred following the permission from the telecom leadership and approval from the Walden University IRB (09-10-14-0080869). Access to the participants occurred through the prospective participants' e-mail addresses listed on each company's internal e-mail database.

Random sampling was the method that I used for selecting participants because it allowed for easy accessibility, was less time-consuming, and allowed for obtaining an appropriate sample size in a study (Ekiz & Au, 2011; Heckathorn; 2011). The

underrepresentation or overrepresentation of groups within the sample, and weak generalizations from the sample to the population (especially if the researcher fails to randomly select the sample) or the phenomenon under investigation, may vary considerably between multiple locations and among participants are the disadvantages of using convenience sampling (Lee & Yu-Yao, 2006). A precautionary measure used to address these disadvantages was obtaining the sample size for this study. Based on a computed sample size using G*Power 3.1.7 statistical software (Faul, Erdlelder, Buchner, & Lang, 2009), a minimum sample size of 77 participants was sufficient for this study (see sample size justification in population and sampling section). The survey response rate was a consideration, so the surveys were electronically available to a greater number of respondents to meet the minimum target sample size.

As a management employee working in one of the telecom locations designated for the research, I had a strong personal and professional relationship with some of the employees who were potential participants in this research. To facilitate a working relationship and communication with the participants, my mobile telephone number and personal e-mail address were available as a channel for engagement.

The content for the electronic survey included the consent form (see Appendix E). Participants consented to the electronically delivered prior to responding to the survey. Participation in the study was voluntary, and participants could withdraw from the study at any time (before, during, or after data collection). In order to maintain anonymity (e.g., Johnson, 2014), the names of the participants and the companies they worked for do not appear in any publication of this study. The assurance of anonymity of the participants

included ensuring questionnaire responses remained inaccessible to unauthorized persons without their consent. The survey results will remain secured and stored on a password protected computer for 5 years. At the end of the storage period, I will delete and destroy the data with data erasure software.

Research Method and Design

An examination of relationships between support for creativity and innovation, the resistance to change, organizational commitment, and employees' motivation in telecom companies were the focus of the study. The goal of the study, the business problem statement, and the researcher's postpositive worldview were key factors in selecting a research method and design. The details of the selected research method and design are in the subsections below.

Method

A nonexperimental quantitative method involves logical examination of research questions, testing of hypotheses, and determination of linear relationships between variables (Al-Mamun & Adaikalam, 2011; Fisher & Stenner, 2011). The predictor variables in this study were support for creativity and innovation, the resistance to change, and organizational commitment. The dependent variable was employees' motivation. A quantitative approach was appropriate for examining the relationships between the measureable variables in this study (Nimon, 2011). Multiple linear regression was a suitable data analysis technique for examining correlation relationships between variables (Atilgan & Gunay, 2011).

The data collection approach involved administering survey questionnaires.

Participants consisted of workers in telecom service centers located in the United States (Kamau, Olson, Zipp, & Clark, 2011). Cirtita and Glaser-Segura (2012) described survey instruments as cost-effective data collection techniques relative to other qualitative or mixed method approaches.

A quantitative method was appropriate for this study because of the realistic timeframe used in conducting the study. This method took less time to execute than qualitative or mixed method approaches would have. This quantitative research method included (a) the use of close-ended questions in the survey instruments in order to collect data connected to the research topic, and (b) the application of SPSS statistical software in the data analysis process (Pate, Morgan-Thomas, & Beaumont, 2012). Several studies on technological adoption relied on quantitative analysis (Malina, Nørreklit, & Selto, 2011); therefore, the use of the quantitative method for the study of elements associated with the diffusion of innovation as the theoretical framework in this study is appropriate.

The qualitative method was not suitable for this study because there was no subjective interpretation or analysis of data collected from the respondents (Lămătic, 2011; Ryen, 2011). The reliance on subjective judgment garnered through accounts of personal experiences, interviews, and observations rather than use of an established statistical method to produce results in a study made the qualitative methodology less suitable for this study (DeLyser & Sui, 2013; Malina et al., 2011). Qualitative methods are useful for the direct participation of researchers, and inappropriate approach for this study (Nimon, 2011).

The open-ended questions commonly framing the data collection process in

qualitative methods (Chikweche & Fletcher, 2012) were unsuitable for this study. Survey instruments with closed-ended questions were an appropriate channel for data collection in this study. A mixed methodology involves triangulation of data that can involve both close-ended and open-ended questioning, and often represents an extensive exploratory approach; however, additional time commitments and an often extensive financial undertaking characterize the approach (Muskat, Blackman, & Muskat, 2012; Wu, 2012). Qualitative methods involve representational approaches such as observations or interviewing techniques in research studies, and a mixed method combines both qualitative and quantitative research, which is also time consuming (Aussems et al., 2011; May et al,. 2014; Sinha, 2011). Consideration of the time and money constraints led to the conclusion that the mixed method research strategy was not appropriate for this study.

Research Design

The research design was correlational. A correlational design was suitable for the study because of the in-built capability for examining the relationship between the predictor and dependent variables. Support for creativity and innovation, resistance to change, organizational commitment were the predictor variables in this study, and employees' motivation was the dependent variable. I used survey instruments to collect participants' responses (Olawande & Adedayo, 2012). Scott and Bruce's (1994) Climate of Innovation Measure, Resistance to Change Scale, Organization Commitment Scales, and WEIMS were the adapted instruments for collecting data from the target population who were telecom service center employees located in (a) Dallas, Texas, (b) Denver,

Colorado, (c) Middletown, New Jersey, and (d) Seattle, Washington. Multiple linear regression was the selected data analysis technique to analyze the data, test the hypotheses, and confirm the relationship existing between quantifiable variables in the study (Ansong & Gyensare, 2012; Fisher and Stenner (2011). The correlation design was suitable for examining the relationship between variables without controlling the predictor or dependent variables in the study, and was the quantitative process of inquiry in this research.

Population and Sampling

Population is the term used to describe a group representing the targeted set of individuals a researcher plans to study (Ye, Leung, Fong, & Mok, 2011). The population that I identified in this study included telecom service employees within the United States located in (a) Dallas, Texas, (b) Denver, Colorado, (c) Middletown, New Jersey, and (d) Seattle, Washington. The population consisted of frontline managers with a supervisory role and nonmanagement employees with experiences using new technology. Executive level managers in leadership positions such as directors, vice-presidents, and senior-vice presidents were not appropriate for this study.

Sampling of the population entailed the extraction of subsets from the general frame in order to examine characteristics (Dura & Driga, 2011). The extraction also involved the selection of individuals from the statistically sampled population to infer characteristics to the entire population (D'Haultfoeuille & Maurel, 2013; Dobbie & Negus, 2013; Ducey, 2012). The sample population was telecom service employees, which consisted of line managers and non-management workers who had experience

using new technology in their daily jobs. Random sampling technique was the method used to enlist the participants from the population because of the ease of access through working relationships with the participants. The selected sample was a representation of the population from telecom company locations, and thus limiting the generalizations of the study to a wider population of all other telecom companies in the United States.

Sample Method

Random sampling is a probability sampling method suitable for selecting individuals from the general population (Liu, Chen, Cheng, & Lu, 2011). A random sample between 77 and 119 telecom employees was adequate for the study because the participants met the criteria for inclusion and were readily available to participate in the study (Faul et al., 2009). The additional reasons for selecting a random sampling strategy were that it (a) is a widely used, (b) is easy to use, (c) allows for easy accessibility to the participants, (d) allows researchers to use statistical methods to examine or scrutinize sample results, and (e) is affordable (Suri, 2011). Vongsuraphichet and Johr (2011) described random sampling techniques as useful in generating survey responses from two groups within the same population. In the Vongsuraphichet and Johr study, the two groups within the same population were management and non-management employees. The geographic locations of the population encompassed four different cities in the United States. A random sampling strategy was appropriate for generating survey responses from participants drawn from different locations, with each telecom employee having an equal chance of being selected unbiased. The sampling method used in this study followed the recommendations of Liu, Chen, Cheng, and Lu (2011) and of Mouw

and Verdery (2012).

Eligibility criteria. The eligibility criteria for the inclusion of participants in this study were participants who (a) were employees of a telecom company; (b) were knowledgeable in IT and computerized systems used in the service centers; (c) experienced technological or innovative changes in the service centers; and (d) were non-management employees or line managers/supervisors. Not every telecom worker is an IT professional; therefore, employees who lacked knowledge or experience in the IT services within the telecom industry were not eligible to participate in the study. Another exclusion criterion in the study was the responsible position held by the participant; senior managers were ineligible to participate in the study.

Sample Size

Sample size estimation was relevant in calculating and determining statistical extrapolation about a population from a sample (Glick, 2011; Singh, Tailor, Singh, & Kim, 2011). A power analysis, using GPower3 software, was useful for determining the appropriate sample size for the study. An a priori power analysis, assuming a medium effect size (f = .15), a = .05, indicated a minimum sample size of 77 participants would achieve a power of .80. Increasing the sample size to 119, increased power to .95. Therefore, I used between 77 and 119 participants for the study (see Figure 5).

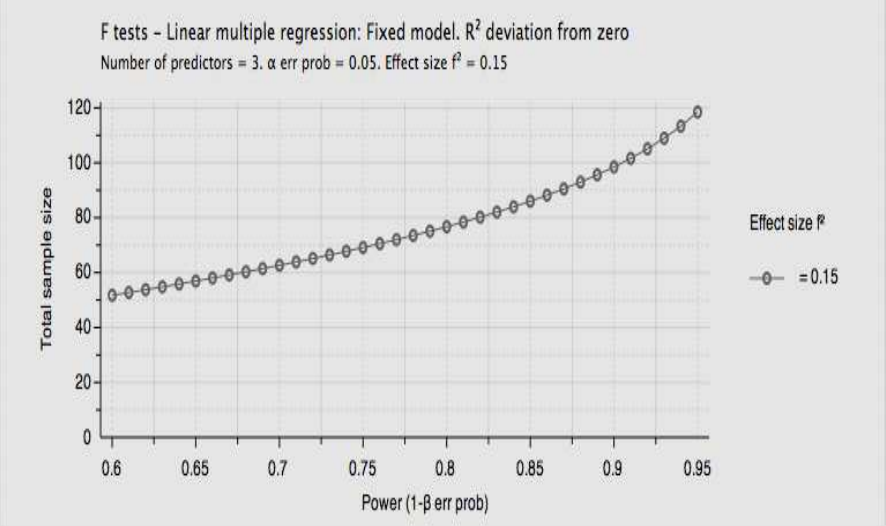

Figure 5. Power as a function of sample size.

Relevance of Characteristics of the Participants

The characteristics of the individual participants were relevant in addressing the research question pertaining to the extant relationship between support and creativity, tolerance, organizational commitment for innovation, and employees' motivation. The non-management workers were relevant in the study because they represented the front line employees who used computerized technologies to interface customers, resolved service problems, and provided quality service. The management employees were relevant in this research because of their responsibilities to introduce the innovation and to manage the employees who adopted the innovation to create value for the telecom company. Both groups participating in the study were from the same industry (telecom service and information technology), and their characteristics complemented each other; both groups adopted new technologies to achieve business goals. All participants were volunteers and over 18 years old.

Ethical Research

Compliance to ethical standards is important in academic research (Johnson, 2014). Each participant in the study was a telecom employee of a United States telecommunication company. Participation in the study was voluntary. Individually, participants expressed their agreement to take part in the research by signing consent forms (see Appendix E) prior to answering questionnaires in the survey instrument. The consent form appeared before the questions of the survey instrument. The seventh paragraph of the consent form contained a statement regarding the participant's right to terminate his or her contribution to this study at any time. I included contact information in the consent form (e-mail address, and a phone number) for participants to make inquiries or voice concerns. Participants completed the survey after receiving a formal introduction letter containing a confidentiality clause explaining his or her rights to participate, and after signing the consent form.

In compliance with the Institutional Review Board (IRB) guidelines, I protected and secured data acquired from the participants and disclosed any offer of incentives associated with the study (Silberman & Kahn, 2011). There were no compensations for participating in this study. The data from the participants pertained only to this study and the participants' names or identifying information remained protected and could not reveal participants' identities. I stored data collected from the participants on a USB drive, secured the data in a locked file cabinet where it will remain for a minimum of five years. At the end of the 5-year storage period, data deletion and destruction of the USB drive through smashing will occur.

Data Collection

Structured questionnaires were convenient methods of data collection (Kulshreshtha, 2011) in this quantitative study (Kelemen & Rumens, 2012). The selected survey instruments used to measure the predictor variables were (a) Climate of Innovation Measure, (b) Resistance to Change Scale, and (c) Organizational Commitment scale. Work Extrinsic and Intrinsic Motivation Scale was the selected instrument used to measure the dependent variable. I based the validity and reliability of the instruments on the confirmed results from other studies involving innovation adoptions, tolerance to change, organizational commitment, and employees' motivational behaviors (Oreg, 2003; O'Reilly & Chatman, 1986; Scott & Bruce, 1994; Tremblay et al., 2009). The permissions to use the instruments are in Appendices B, C, D, and E. There was no pilot study required to evaluate the instruments.

Survey Instruments

Climate for Innovation Measure. The Climate for Innovation Measure was the selected instrument for measuring support for creativity and innovation, the predictor variable in this study. Siegel and Kaemmerer (1978) developed the instrument as *Siegel Scale of Support for Innovation* to measure an individual's support for creativity and innovation by evaluating the magnitude of organizational innovative climate. Ancarani, Mauro, and Giammanco (2011) described organizational climate as the expected behaviors for organizations based on culture reflected through employees' behaviors. These behaviors could connote a set of shared views regarding individuals' perceptions of organizational policies, practices, and procedures (Carol & Feng-Chuan, 2012).

Scott and Bruce (1994) modified Siegel and Kaemmerer's (1978) scale by substituting items to measure available resources and rewards for innovation. The resulting instrument was useful for establishing a relationship between levels of an individual's support for creativity and innovation, and the person's innovative behavior. This modified instrument cumulated into 22 items containing three subscales called the Climate for Innovation Measure, for measuring support for creativity and innovation. The three subscales included support for creativity, tolerance for change, and organizational commitment. Support for creativity encompasses the relative climate as an important predictor of organizational performance and is an elemental strategy for sharing of knowledge, work processes, and services; these were contributing factors to business success (Carol & Feng-Chuan, 2012; Fruchter & Bosch-Sijtsema, 2011).

In this study, the first eight items of the survey reflected organizational support for creativity. Tolerance for Change evolved from Siegel and Kaemmerer's (1978) study that highlighted the relationship between an individuals' tolerance for change and levels of autonomy. Items 9 - 16 measured the tolerance for change construct; these items reflected the measure of employees' levels of tolerance for change within the organization. Organizational commitment is an important factor in building an environment that is supportive of employees' levels of creativity and motivation (Zhou, Zhang, & Montoro-Sánchez, 2011). Items 17 – 22 were appropriate for measuring personal commitment to support innovation.

Overall, I used Climate for Innovation Measure (Appendix A) to measure individuals' perceptions of organizational openness to change, creative and innovative

ideas of the employees, and levels of tolerance for member diversity in this study. I used the Likert-type scale to measure the psychometric responses from participants to questionnaires and surveys with closed-ended questions (Woltz, Gardner, Kircher, & Burrow-Sanchez, 2012). Likert scales were easy to construct, were reliable, and were effective measures of vital psychometric constructs (Holt, 2014; Lantz, 2013). The 5-point Likert-type scale ranged from 1 to 5 points, with one representing strongly disagree, and five representing strongly agree. The scale was suitable for extracting the psychometric response from the participants and the Cronbach's alpha for the support for innovation subscale was 0.92. Kmieciak, Michna, and Meczynska (2012), Turnipseed and Turnipseed (2013), and Yi and Begley (2011) studies on innovative capability and innovative organizational climate, confirmed the instrument's reliability and validity after using the instrument in studies measuring organizational innovative climate, employees creative, and adoption of innovation.

Resistance to Change Scale. The Resistance to Change Scale (RTC) is a 17-item survey developed by Oreg (2003) to measure multi-faceted behaviors linked to an individual's tolerance or resistance to change. The RTC scale emanated from a combination of studies designed to measure the reliability and validity of the construct of resistance to change, tolerance for ambiguity, and individuals' cognitive abilities (Oreg, 2003). The scale included four reliable dimensions useful for evaluting an employee's descriptive and predictive resistance to change; the dimensions were routine seeking, emotional responses to imposed change, cognitive rigidity, and short-term focus (Oreg, 2003). The test of measurement equivalence emerged from an established configuration

or same-scale structure and partial (same-item loading) metric invariance.

Oreg (2003) conducted an exploratory study and assigned values to the four reliable constructs measured by the Resistance to Change instrument. The first construct is Routine Seeking (RS), which symbolized the behavioral elements of resistance and tolerance to change or to adopt a new practice (Peccei et al., 2011). Oreg (2003) designed items 1 – 5 for measuring this construct. The construct had variance of 38.7% with an Eigenvalue of 8.9. Emotional Reaction (ER) is the second construct measured by the RTC. This was the sentimental or emotional dimension of resistance to change symbolizing the level of intolerance, uneasiness, and stress caused by the introduction of change (Smollan, 2012). Oreg (2012) used items 6 – 9 to measure this construct. The emotional response to change had a variance of 9.8% with an eigenvalue = 1.9. Short-term Focus (SF) was the third construct measured by RTC, and this was an effective component of resistance and tolerance to change (Tang & Gao, 2012). Resistance and tolerance to change measure depicted the level of distraction and short-term inconveniences an individual suffered because of introduced change. Oreg (2003) used items 10 – 13 to measure short-term focus construct. The construct had a variance of 5.6% and an eigenvalue of 1.3. Cognitive Rigidity (CR) was the fourth construct measured by the RTC. This element represented the cognitive dimension of tolerance and resistance to change, denoting the rate or incidence and ease with which a person changed their mind regarding change (Kuntz & Gomes, 2012). The cognitive rigidity was measurable with items 14 – 17 and had an assigned variance of 5% with an eigenvalue = 1.2.

A 6-point Likert-type scale had a range from one to six points with 1 representing strongly disagree, and 6 representing strongly agree. The scale was suitable for extracting the psychometric responses from the participants. The score of RTC measurement was the mean of the 17 items (after reversing the scores of items 4 and 14) and the Cronbach's alpha for the RTC scale was 0.92. Jaramillo, Mulki, Onyemah, and Martha (2012), Peccei et al. (2011), and Smollan (2011) studies on organizational commitment and resistance to change, confirmed the instrument's reliability and validity after using the instrument in studies measuring employee tolerance and resistance to change.

Organizational Commitment Scale. O'Reilly and Chatman (1986) developed the Organizational Commitment Scale for the purposes of measuring an employee's psychological bond to their organization. The scale consisted of 12 items designed to extract employees' desires to maintain organizational membership based on willingness to exert effort (compliance), and acceptance of organizational values and goals (identification) (Dhammika, Ahmad, & Sam, 2012). The 12 items in the scale operationalized the three dimensions: (a) internalization, denoted by items 1 – 5 (*INT*1, *INT*2, *INT*3, *INT*4, and *INT*5); compliance, denoted by items 6 - 9 (*COMP*1, *COMP*2, *COMP*3, *and COMP4*); and identification and organizational commitment reflected by items 10 – 12 (*ID1*, *OCQ1/ID2*, and *OCQ2/ID3*). A 7-point Likert-type scale, with a range from one to seven points, and with one representing strongly agree and seven representing strongly disagree was suitable for extracting the psychometric responses from the participants. The Cronbach's alpha for the support for innovation subscale was 0.92.

Dhammika et al. (2012) recognized the use of measuring organizational commitment through the development of a scale for appraising employees' levels of job satisfaction and perceptions of their organizations and defined job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of a person's job and job experiences. Ferris and Aranya (1983) reported a relationship between organizational commitment and socio-psychological variables as a relationship comprising of a fit or congruence between person and organization. The total score for organizational commitment was equal to the sum the three dimensions and was equivalent to the average of the items (Dhammika et al., 2012). Higher scores indicated greater organizational commitment, and a lower scores signified lesser organizational commitment (O'Reilly & Chatman, 1986). Ferris and Aranya (1983), Krishnaveni and Ramkumar (2008), and (Dhammika et al., 2012) in various studies on revalidation of organizational commitment scale, confirmed the instrument reliability and validity using the organizational commitment scale; the instrument had a Cronbach's alpha coefficient of 0.92. Given the internal consistencies ($p > 0.70$) for the organizational commitment scale (Krishnaveni & Ramkumar, 2008), a multiple linear regression analysis was appropriate in ascertaining the results of statistical study of the relationships pertaining to employee work, self-determined motivation, and non-self-determined motivation.

Work Extrinsic and Intrinsic Motivation Scale (WEIMS). As an 18-item self-reporting instrument for measuring employees' work motivation (Tremblay et al., 2009), the WIEMS measurement represents the dependent variable in this study. The instrument was appropriate for predicting positive and negative organizational conditions based on a

person's work-related, self-determined motivation and work-related, non-self-determined motivation. Studies by Achakul and Yolles (2013), Tremblay et al. (2009) and Shin-Yuan, Hui-Min and Wen-Wen (2011) linked and measured work motivation using the Self-Determination Theory (Deci & Ryan, 2000), to establish a relationship between employees' levels of motivation and organizational changes in workplaces. The six-factor structure of the WEIMS incorporated three items (per construct) serving as indicators and each item consisted of loadings higher than 0.30 (Tremblay et al., 2009).

The WEIMS consisted of three-item six subscales that corresponded to six types of motivation represented in the SDT: (a) intrinsic, (b) integrated, (c) identified, (d) introjected, (e) external regulations, and (f) amotivation, (Wong-On-Wing, Guo, & Lui, 2010). Self-Determined Motivations (SDM) consisted of identification, integration, and intrinsic motivation whereas amotivation, external regulation, and introjection were not Self-Determined Motivation (NSDM). The constructs measured for the dependent variable in this study, the Work Self-Determined motivation (W-SDM), contained six subscales with three-items per subscale.

The first subscale was Intrinsic Motivation (IM). Intrinsic Motivation is the description of the activity an employee finds inherently satisfying (Shin-Yuan et al., 2011). This subscale includes items *IM*4, *IM*8, and *IM*15, with loading Eigenvalues of 0.41, 0.31, and 0.40 respectively. The second subscale was the Integrated Regulation (INTEG). INTEG is the ability of an employee to identify with a specific value of the activity to the extent that the action becomes part of a person's sense of self (Tremblay et al., 2009). This subscale includes items *INTEG*5, *INTEG*10, and *INTEG*18 with

respective loading Eigenvalues of 0.44, 0.41, and 0.42 respectively.

The third subscale was the Identified Regulation (IDEN). IDEN is about an employee carrying out a task or activity because he or she identifies with the value of the performance and accepts ownership and responsibilities (Doron et al., 2011). This subscale included items *IDEN*1, *IDEN*7, and *IDEN*14 with respective loading Eigenvalues of 0.45, 0.63, and 0.33 appropriate for measuring the construct. The fourth subscale was the Introjected Regulation (INTRO). The INTRO subscale includes items *INTRO*6, *INTRO*11, and *INTRO*13 with respective loading Eigenvalues of 0.44, 0.38, and 0.56 appropriate for measuring introjected regulation. Introjected regulation refers to personal regulation of behavior through self-worth contingencies such as personal pride, self-confidence, experience, trust, and likeness (Doron et al., 2011).

The fifth subscale was the External Regulation (EXT). The EXT represents the ability of an employee to perform an assigned task or job because of the reward tied to it (Minbaeva et al., 2012). This subscale includes items *EXT*2, *EXT*9, and *EXT*16 with respective loading Eigenvalues of 0.87, 0.82, and 0.70 appropriate for measuring the construct. The sixth subscale was the Amotivation (AMO) measure. The AMO is a description of a passive action or an employee's lack of intention to act towards a task or duty (Doron et al., 2011). This subscale includes items *AMO*3, *AMO*12, and *AMO*17 with respective loading Eigenvalues of 0.36, 0.44, and 0.34 appropriate for measuring the construct.

A five-point Likert scale was the selected and appropriate scale for measuring employees' motivational behaviors in relation to supporting innovation in telecom service

centers (Woltz et al., 2012). The constructs in the questionnaire were useful for linking employees' motivational behaviors to support for innovation and creativity. This instrument also measured the degree of employee motivation related to change. The study participants showed their levels of concurrence with each of the 18 items structured in a Likert-type scale format ranging from 1 (*does not correspond at all*) to 5 (*corresponds exactly*).

Tremblay et al. (2009) reported on the use of a multidimensional approach by to score motivation, and the use of a single score in calculating the work- self-determination index (W–SDI) is desirable. WEIMS was appropriate for generating a W-SDI index by multiplying the mean of each subscale by weights corresponding to the underlying levels of self-determination (Tremblay et al., 2009). With the presumption of the loaded Eigenvalues for each subscale and a range of possible scores of ±24 when using a 5-point Likert-type scale (Tremblay et al., 2009), the formula for determining the W–SDI Total score was (+3 x IM) + (+2 x INTEG) + (+1 x IDEN) + (-1x INTRO) + (-2 x EXT) + (-3 x AMO).

Tremblay et al. (2009) noted the usefulness of W–SDI in the selection of individuals with either a self-determined or a non-self-determined motivational profile. The total score obtained from the above calculation signified individuals' relative levels of self-determination. A positive score denoted a self-determined profile, and a negative score indicated a non-self-determined profile. Previous research has shown that the self-determination index displays high levels of reliability and validity, with a Cronbach's alpha coefficient of 0.84 (Tremblay et al., 2009). Given the internal consistencies of 0.87

for W-SDI, a multiple linear regression analysis was appropriate for ascertaining the positive and negative organizational results in relation to an employee's work-self determined and non-self-determined motivation.

Reliability and validity. The validity of the research methodology was inherent in the provision of same consent form, survey, and instructions for accessing and completing the survey administered to the study participants. The validity of the survey instrument involved the recruitment of a panel of Walden University doctoral candidates to verify that the surveys' content was readable and easy to access. Any recommended change to the survey instrument was subject to evaluation for accuracy, necessity, and appropriateness before administering the survey to the participants. Identification of the predictor variables and dependent variable was a critical step in maintaining the instruments' internal consistency and minimizing threats to instrument validity during data collection process (Marsden, 2011). The survey questions in the study included items designed to link the research questions to the business problems in statistical form (Ihantola & Kihn, 2011).

Data description. The accurate descriptions of data and scores were important for examining the relationships between the variables in this quantitative, correlation design. The support for creativity and innovation, resistance to change, and organizational commitment to support innovation were the predictor variables. Employees' motivation was the dependent variable. Multiple linear regression tests helped to determine the degree of the overall relationship between the variables and were appropriate for examining these variables for relationships.

Access to the survey instrument. Each participant's access to the survey questionnaire was through Fluidsurveys ™, an online data collection tool. The access commenced with the mailing of the survey to the participants using the e-mail addresses stored in the Fluidsurveys ™. The reasons for the selection of Fluidsurveys ™ included (a) convenience, (b) accessibility by researcher and participants, (c) the site afforded anonymity, and (d) the site facilitated data entry and export mechanisms (Baltar & Brunet, 2012; Comley & Beaumont, 2011). I used the tool to facilitate the access and monitoring of the participants' responses and the retrieval of the data from the completed surveys.

Data Collection Technique

Solicitation for each telecom employee's participation occurred through e-mail, to obtain the individual's interest to take part in the study. An online survey website, Fluidsurveys ™, was the channel for administering the consent form and survey to the participants. A survey instrument consisting of 69 items with graduated Likert-type scales to measure the participant's responses, and administered online during the stipulated time designated for data collection. Each participant consented to the disclosure form, then accessed and completed the survey using an online link to Fluidsurveys ™. Participation was voluntary, and compensation limited to a copy of the survey analysis and published study results upon request.

Data Organization Techniques

The data organization technique used in this study involved the sorting, coding, and classification of data to improve research efficiency. Data organization involved

handling survey responses in ways that reduced the risk of data corruption while safeguarding the identities of the participants. I coded and identified the respondents as R1, R2, R3, R4, and so on, and put this code in the first column of the SPSS data file. The codes SC, RTC, and OC identified support for creativity and innovation, resistance to change, and organizational commitment to supporting innovation, the constructs in Climate for Innovation measure. The codes RS, ER, SF, and CR, identified routine seeking, emotional reaction, short-term focus, and cognitive rigidity were the constructs in climate for Resistance to Change scale. The codes INT, COMP, and OCQ, identify internalization, compliance, and organization commitment were the constructs in climate for Organization Commitment Scale. The codes IM, INTEG, IDEN, INTRO, EXT, and AMO identifies intrinsic, integrated, identified, introjected, external regulation and amotivation were the constructs measured with the Work Extrinsic Intrinsic Motivation Scale. These codes representing the predictor variables and the dependent variable appear as column headers on the spreadsheet.

An important aspect of data organization included the entering or inputting of the numeric values of the questions to correspond with the participants' responses into SPSS table editor window. I protected the confidentiality and security of each participant by eliminating all information that would link the participants' responses or identities to their organization. Storage of the raw data (surveys and participants' list) was on a hard drive deposited in a fire-resistant safe-deposit box. Data will remain secured for a period of five years. Additional protection of the participants will include using a file shredding software to fragment and erase hard copy data relevant to the study 5 years after the

completion of this study.

Data Analysis

Multiple linear regression was the selected data analysis technique for this study. Multiple regression analysis was useful because of the technique's suitability for examining a quantitative variable in relation to any other factors aligned with the overarching research question. Multiple regression is a data analysis technique useful for examining the relationship between one continuous dependent variable and a number of predictor variables (Pallant, 2009). Correlational analysis forms the basis for multiple regression analysis; in the correlational analysis, the researcher examines the strength and direction of the linear relationship between two variables (Pallant, 2009). The advantage of using a multiple regression data analysis instead of a bivariate correlational analysis was that the former enhances analytic capabilities. The capabilities associated with the chosen technique included (a) demonstrating how a set of variables could predict a particular outcome; (b) identifying which predictor variable is the best predictor of an outcome; (c) examining individual subscales and the relative contribution of each of each variable to the scale (Pallant, 2009); and (d) the utility of the results to answer the research question.

Data Analysis Technique

Quantitative data analysis is appropriate for use in analyzing, presenting, and interpreting data pertaining to research questions and hypotheses (Nasef, 2013). I scrutinized the data from the participants' surveys for accuracy before uploading data into SPSS software for statistical testing. The selected data analysis technique was multiple

linear regression, and the SPSS software was an appropriate tool for importing, aggregating, sorting, and analyzing data to determine statistical relationships in this study (Brezavscek, Sparl, & Znidarsic, 2014). The three phases of data analysis were (a) descriptive data analysis, (b) multiple linear regression analysis, and (c) acceptance and rejection of the hypothesis.

Phase 1: Descriptive data analysis. This phase includes conducting descriptive data analysis of the data gathered through a survey instrument. The use of SPSS to conduct tests of a series of descriptive statistics generated the mean, mode, range, standard deviation, kurtosis, skewness of the sample, and test of the normality. The use of descriptive statistics in this study provided a visual linkage between the responses from the participants and the variables.

Phase 2: Multiple linear regression data analysis. This phase of data analysis consists of two steps. First, I addressed assumptions associated with the use of multiple linear regression approaches. The second step was execution of the multiple linear regression techniques.

***Assumptions of multiple regression*.** Multiple regression statistical technique is sensitive to the quality of data (Pallant, 2009). Given these sensitivities, researchers must manage a number of assumptions about the collected data (Pallant, 2009). The assumptions surrounding multiple linear regression techniques were (a) multicollinearity, (b) outliers, (c) linearity, (d) homoscedasticity, and (e) independence of residuals (Pallant, 2009; Ringim, Razalli, & Hasnan, 2012).

***Multicollinearity*.** Multicollinearity refers to the relationships among the

independent variables and occurs when the independent variables were highly correlated with each other (Chen, 2012; Guimaraes, 2011; Pallant, 2009). The consequences of violating the multicollinearity assumption could include unreliable estimation results, coefficients with incorrect signs, high standard errors, and implausible magnitudes (Enaami, Mohamed, & Ghana, 2013; Garcia, Pérez, & Lira, 2011). Pallant (2009) addressed the assumption by assessing the correlation matrix of the predictor variables, and examining the values of the Variance Inflation Factor (Zainodin, Noraini, & Yap, 2011).

Outliers. Abnormal or inconsistent values in the data indicating nonidentically distributed values are outliers (Zhu, Kitagawa, Papadimitriou, & Faloutsos, 2011). The presence of outliers often results from errors in logging or recording of the collected data (Morell, Otto, & Fried, 2013). Outlier violations can distort regression results by substantially affecting the regression coefficients. The result of this violation includes an incremental change in the residual variance estimate, which could lower the possibility of rejecting the null hypothesis (Morell et al., 2013). Multiple linear regression analysis is extremely sensitive to outliers (Besseris, 2013; Pallant, 2009). I detected, screened, and cleaned data for outliers as these were essential steps in the production of quality multiple linear regression. Outlier detection was the process of spotting the inconsistent data objects in the remaining set of data (Zhu et al., 2011), and outlier detection is critical in discovering the unexpected behaviors of certain objects (Shi & Zhang, 2011). Checks for the presence of outliers occurred by inspection of the scatterplot of the data and Mahalanobis distance produced by the multiple regression models (Pallant, 2009).

The assumption of linearity. An indication that the dependent variable has a linear function of the predictor variables is essential (Tkadlec, Lisická-lachnitová, Losík, & Heroldová, 2011). The imprecise or wrong measurement of regression models to analyze data and manipulation of data are common causes of this violation. The resulting generation of biased estimates of the regression coefficient or erroneous predictions of the dependent variable are common results associated with the violation of the assumption of linearity (Tkadlec et al., 2011). I used the scatter plot to meet the assumptions of linearity (Ibrahim, Ghana, & Embat, 2013).

The assumption of homoscedasticity. The essential consideration of the assumption of homoscedasticity is that the variances or residuals for scores of the dependent variables are approximately equal (Schützenmeister, Jensen, & Piepho, 2012). The probable causes of this violation included (a) outliers, (b) use of enhanced data collection techniques, and (c) omitting a variable from the dataset. The consequences of violating this assumption included making improper inferences and bias in standard errors. The generation of normal probability plot (P-P) for this study enabled the assessment and checks for the assumption of homoscedasticity (Pallant, 2009).

The assumption of normality. Normality is an indicator that the distribution of sample means across predictor variables is normal (Schützenmeister et al., 2012). A general outcome of violating this assumption is that estimates of confidence intervals and p-values may become inaccurate when using a small sample. As recommended by Fišerová and Hron (2012), I incorporated the Shapiro-Wilk normality test to check that there was no violation of the assumption of normality in the regression model.

The assumption of independence of residuals. The independence of residuals is an assumption that the size or values of the residual is independent or does not affect the size or values of the other residual; this is an important consideration in quantitative analysis (Green & Salkind, 2011). The use of wrongful measurements of the predictor variables is a common violation of this assumption. Consequences of violating this assumption include the possibilities of generating biased estimates of the regression coefficient and making erroneous predictions of the dependent variable (Hoderlein & Holzmann, 2011). I conducted the Durbin-Watson statistic test to ensure meeting the assumption of independence residuals (Kochetkov, 2012).

Conducting multiple linear regression. The third step in this phase was the computation of multiple linear regression models using SPSS. This step was important in correlating how well the model predicted the observed data by computing relationships between multiple predictor variables and the dependent variable in the study (Satman, 2013). The main objective of using this type of analysis was to examine the relationship between predictor variables and the dependent variable (Adamowski, Chan, Prasher, Ozga-Zielinski, & Sliusarieva, 2012; Armeanu, Vintila, Moscalu, Filipescu, & Lazar, 2012; Rasmussen, Jensen, & Servais, 2011; Zahari & Shurbagi, 2012). Lin, Zhuang, and Huang (2012) and Waller (2011) expressed the simple linear regression equation linking a predictor variable to the dependent variable as:

$$\hat{Y} = b_0 + b_1X_1. \quad (1)$$

However, with the use of three predictor variables in the study, the multiple linear regression equations linking the three-predictor variables to the dependent variable was:

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 \ldots \quad (2)$$

In this equation, $\hat{Y}$ was the expected value of the dependent variable, X_1 through X_3 were distinct independent or predictor variables, b_0 was the value of Y when all of the predictor variables (X_1 through X_3) were equal to zero, and b_1 through b_3 were the estimated regression coefficients.

Phase 3: Acceptance and rejection of the hypothesis. The third phase in the data analysis was the use of the derived results from the statistical analyses to accept or reject the null hypothesis. The null and alternative hypotheses were:

*H*1o: There is no relationship between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation.

*H*1a: There is a relationship between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation.

The research question in this study was: What relationships exist between telecom employees' support for creativity and innovation, resistance to change, organizational commitment, and motivation? Framing the identified business problem occurred within the diffusion of innovation theory; this theory linked the research question to the data analysis (Lombardo & Valle, 2011; Purucker, Landwehr, Sprott & Herrmann, 2013). The failure to reject the null hypothesis or the decision to reject the null hypothesis was dependent on the results of the inferential statistics used for interpreting the relationship between variables with respect to levels of significance (Day, 2012; Oladimeji, 2012). The overall analysis of the data formed the basis for interpreting, presenting, and explaining the key consistencies for the purposes of answering the research question and

discussing the implications for the population, leadership, and the wider research community.

Reliability and Validity

Reliability

Reliability is the extent to which the use of an instrument or tool generates stable and consistent scores (Gorrell, Ford, Madden, Holdridge & Eagleston, 2011). The confirmation of instrument reliability was important in this study (Obaji, 2011; Zahari & Shurbagi, 2012). Reliability in this study related to the repeatability and confirmability of the content of the surveys (Lewlyn, Barkur, Varambally, & Farahnaz, 2011; Talib, Atan, Abdullah, & Murad, 2012). I reused the survey instruments (see Appendix A) with permission, from previous studies related to the research topic (Bruce & Scott, 1994; Oreg, 2003; O'Reilly & Chatman, 1986; Tremblay et al., 2009). Based on the reported reliability of the instruments from other studies, the Climate of Innovation Measure instrument had a Cronbach's alpha of 0.92 for the creativity and support for innovation. The Cronbach's alpha for Resistance to Change was 0.92. The Organizational Commitment Scale instrument had a Cronbach's alpha of 0.92 and Cronbach's alpha for the WEIMS survey instrument was very reliable ($\alpha = 0.84$).

Validity

Validity is the affirmation of an instrument's measurement purpose, depicting accurately what it should measure (Erdinc & Yeow, 2011; Guhn, Zumbo, Janus, & Hertzman, 2011; Hubley & Zumbo, 2011). Content validity in this study was the assurance that the survey instrument would measure the purported content of the

construct accurately. Ensuring data validity required the use of additional precautions to enter data correctly into the SPSS software and to validate that the entered data matched the predefined convention and acceptable limits. Although internal and external validity are important in a quantitative study (Carlsen & Glenton, 2012; Kieruj & Moors, 2013), these types of validity were not requisite in this non-experimental design (Terhanian & Bremer, 2012).

Scott and Bryan (1994) conducted a series of tests using factor analysis to confirm content and construct validity of the Climate of Innovation instrument. Kmieciak et al. (2012) and Tsai (2011) studies on innovative behaviors between employment modes in knowledge IT intensive organizations, used the instrument in addition to the innovation diffusion theory to confirm the validity of the instrument. Based on multiple linear regression analyses and replication of similar findings from other studies, Tremblay et al. (2009) validated the work-self-determination index. The WEIMS construct content and criterion validity included survey items for measuring and validating employees' reports pertaining to work self-determined motivation and work non-self-determined motivation in the workplace (Tremblay et al., 2009).

Transition and Summary

Section 2 included details about the role of the researcher in this study. This section also contained explanations of the population and sample selection, research method and design, data collection and data analysis methods. A presentation of the quantitative techniques for conducting the study's data analysis follows in Section 3. This presentation addresses the interpretations of the research findings, presentation of the

results, and a discussion of how the research is relevant to the specific business problem.

Section 3: Application to Professional Practice and Implications for Change

The purpose of this quantitative correlation study was to examine the relationship between a linear combination of predictor variables and a dependent variable. I collected, analyzed, and interpreted the data relevant in addressing the central research question. The central research question was: What relationships exist between support for creativity and innovation, resistance to change, organizational commitment, and employees' motivation? The following research hypotheses reflected the research question:

$H1_0$: There is no relationship between support for creativity and innovation, resistance to change, organizational commitment, and employees' motivation.

$H1_a$: There is a relationship between support for creativity and innovation, resistance to change, organizational commitment, and employees' motivation.

Summary of Findings

The model as a whole was inadequate to significantly predict motivation, F (3, 78) = 5.481, $p < .002$, $R^2 = .174$. The low R^2 (.174) value indicated that approximately 17% of the variations in motivation is explained for by the linear combination of the predictor variables (support for creativity and innovation, and organizational commitment, and resistance to change), which could be improved by incorporation of additional motivational based variables. The findings indicated that two independent variables (support for innovation and creativity, and organizational commitment) were significantly related to the motivation levels of telecom employees. The results indicated that employees' motivation tends to increase as support for creativity and innovation

increases, while employees' motivation tends to decrease as organizational commitment increases.

The findings also indicated that support for creativity and innovation, and organizational commitment were significant predictors of employees' motivation. The results further indicated a significant negative relationship exists between resistance to change and employees' motivation. The findings indicated a higher standardized regression coefficient for the predictor variable employee's support for creativity and innovation, indicating that support for creativity and innovation explained the most variance in the dependent variable. I rejected the null hypotheses based on the findings from the study.

Presentation of the Findings

I used the data collected from 81 completed surveys to conduct descriptive statistical analysis (see Table 1). The assumptions pertaining to the regression model in this study were assessed by the procedures identified in section two. Additionally, I examined the correlation coefficient, scatterplot, and normal probability plot to assess the possible influence of assumption violations.

Table 1

Means (M) and Standard Deviations (SD) of the Variables (N = 81)

Variable	*M*	*SD*	Bootstrap 95% CI (M)
Employees' motivation	62.69	8.40	60.82 - 64.46
Support for innovation and creativity	70.59	5.79	69.29 - 71.89
Resistant to change	47.75	10.09	45.59 - 49.87
Organizational commitment	43.00	10.78	40.81 - 45.30

Multicollinearity. Correlation coefficients of the predictor variables were useful for assessing multicollinearity. The collinearity statistics were within the acceptable values, and the bivariate correlations were small to medium. Therefore, results indicated no violation of the assumption of multicollinearity as seen in Table 2 and Table 3.

Table 2

Multicollinearity and Collinearity Coefficients for the Independent Variables (N = 81)

Variable	Collinearity statistics	
	Tolerance	VIF
Support for creativity and innovation	.925	1.08
Resistant to change	.934	1.07
Organizational commitment	.903	1.10

Table 3

Correlation Coefficients for Independent Variables (N = 81)

Variable	Support for innovation and creativity	Resistance to change	Organizational commitment
Support for innovation and creativity	1.00	.121	-.216
Resistance to change	.121	1.00	.195
Organizational commitment	-.216	.195	1.00

Outliers, normality, linearity, homoscedasticity, and independence of residuals. To ascertain the accuracy of the data used in this study, I screened the data for outliers prior to data analysis. I assessed the normal probability plot (P-P) of the regression standardized residual and the scatterplot of the standardized residuals to address the assumptions of outliers, normality, linearity, homoscedasticity, and independence of residuals in this study (Figure 6, Figure 7). The results indicated that the residuals were standardized, and there was no identifiable outlier in the data.

The evidence from the normal probability plot (P-P) of the regression standardized residual indicated absence of violation of the assumption of normality, because the points lay in a straight line, diagonal from the bottom left to the top right (Figure 7). I assessed the scatterplot and computed 1000 bootstrapping samples at 95 confidence intervals to provide more appropriate confidence intervals and standard estimates of the data used in the data analysis. The findings indicated the appropriateness of the data used in data analysis, and no violation of the assumptions occurred in the sample.

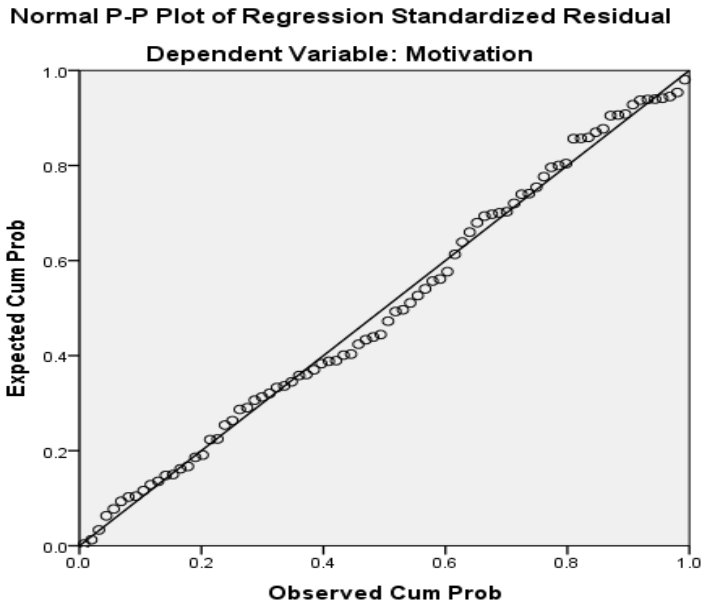

Figure 6. Normal Probability Plot (P-P) of the Regression Standardized Residual

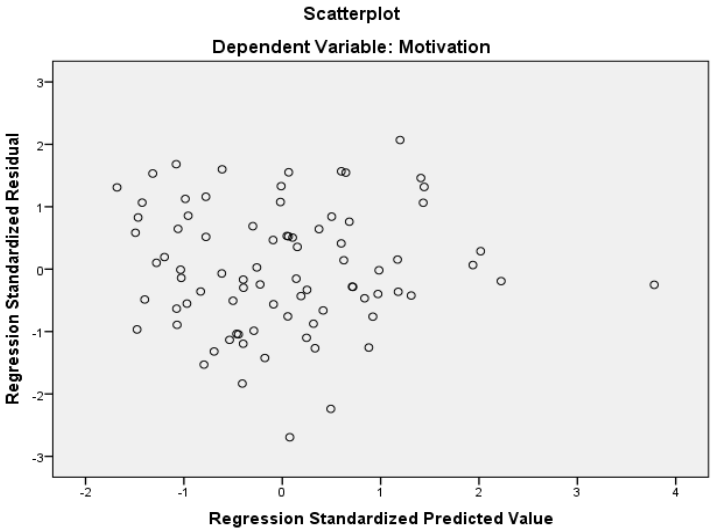

Figure 7. Scatterplot of the Standardized Residuals.

Research Question and Hypothesis

The focus of this study was to determine if relationships exist between telecom employees' support for creativity and innovation, resistance to change, organizational

commitment, and motivation. Performing a multiple regression analysis enabled the utility of using the three predictor variables (support for creativity and innovation, and organizational commitment, and resistance to change) to predict the levels of employees' motivation. I performed preliminary analyses to ensure no assumptions of normality, linearity, multicollinearity, and homoscedasticity was violated (Figures 6 and 7, Tables 1, 2, and 3).

With the entry of the predictor variables, the model was inadequate to significantly predict motivation, F (3, 78) = 5.481, $p < .002$, $R^2 = .174$. The low R^2 (.174) value indicated that approximately 17% of variations in motivation was explainable by the linear combination of the predictor variables (support for creativity and innovation, and organizational commitment, and resistance to change); this was a poor model. In the final model, support for creativity and innovation, and organizational commitment variables were statistically significant with organizational commitment (beta = -.221, $p <$ .044) accounting for a higher contribution to the model than support for creativity and innovation (beta = .307, $p < .005$). The predictor variable resistance to change (beta = -.030, t = -.285, $p > .776$) did not add to the unique predictive power or provide any significant variation in motivation. Based on the statistical significance of the two predictor variables (employees' support for creativity and innovation and organizational commitment), the null hypothesis was rejected. The resulting regression equation was as follows: Motivation = 39.847 + .446 (SCI) - .025 (RTC) - .172 (OC). (3)

Support for creativity and innovation. The positive slope for support for creativity and innovation as a predictor of employees' motivation indicated there was a

.446 increase in employees' motivation for each one-point increase in the support for creativity and innovation. This outcome supported the deduction that employees' motivation tends to increase as support for creativity and innovation increases. The squared semi-partial coefficient ($.296^2$) indicated that .087 or 8.7%, of the variance in employees' motivation was predictable by support for creativity and innovation variable.

Table 4

Regression Analysis Summary for Support for Creativity and Innovation, Organizational Commitment, and Resistance to Change Predicting Employee Motivation (N = 81*)*

Variable	*B*	*SE B*	β	*t*	*p*
Constant	39.847	12.192		3.268	.002
Support for creativity and innovation	.446	.155	.307	2.872	.005
Resistance to change	-.025	.089	-.030	-.285	.776
Organizational commitment	-.172	.084	-.221	-2.044	.044

Note. Predictors (Constant), support for creativity and innovation, resistance to change, and organizational commitment.

Organizational commitment. The negative slope for organizational commitment (-.172) as a predictor of employees's motivation indicated that a -.172 decrease in employees' motivation for each additional one-unit increase in organizational commitment. This indicated that motivation tends to decrease as organization commitment increases. The squared semipartial coefficient ($-.210^2$) estimation of how much variance in motivation was uniquely predictable from organizational commitment was .044. This indicated that 4% of the variance in employees' motivation related

directly to organizational commitment. Table 4 depicts the results of the regression analysis.

The conclusion from the analysis is that support for creativity and innovation, and organizational commitment variables have significant standardized regression weights (support for creativity and innovation, beta = .307, $t = 2.872$, $p < .005$; organizational commitment (beta = -.221, $t = -2.044$, $p < .044$): that is, each of the two is a significant contributor to predicting motivation. Additionally, support for creativity and innovation, and organizational commitment variables provided useful predictive information about motivation. Based on these results, the null hypothesis was rejected.

Relation to the Larger Body of Literature

The findings in this study are aligned with the larger body of literature pertaining to the reliance of R^2 as an indicator of the relationships between variables. Gull, Habib-ur-Rehman, and Zaidi (2012) investigated the causal relationship between conflict management styles and team effectiveness; the findings of Gull et al. contrast with the findings in this study. The results in the Gull et al. (2012) study indicated a high $R^2 = 0.9796$; the R^2 value indicated high percentage of variance in the model. Data analysis included the use of regression calculations, correlation coefficients, and the development of linear regression models. Examining data collected from 220 textile workers, Gull et al. claimed management style could hamper or enhance team effectiveness in a firm. Diverse factors such as gender, designation, income level, and age could influence an employee to pursue a specific conflict management style. Gull et al. (2012) argued that despite the high value of R^2, not all variables examined were significant in the final

analysis. For example, analysis of competing style, compromising style, and avoiding style (independent variables) showed an insignificant relationship, a negative association, and a high negative correlation respectively with team performance (dependent variable). Additionally, diversity factors such as age, gender, income level, or job designation had no notable influence on conflict management styles selected for this analysis.

The findings of Gull et al. (2012) indicated that a high R^2 value is a reliable regression model fit for predicting effects of the linear relationship between variables, not necessarily the significance relationship between variables. Despite the contrasting view, findings of this study closely align with the body of literature on the uniqueness and usefulness of multiple regression flexibility in analyzing and interpreting data from a number of models (Brown, Lo, & Lys, 2002; Gerend & Shepherd, 2012; Needham, Anderson, Pink, McKillop, Tomlinson, & Detsky, 2003; Sawamura, Morishita, & Ishigooka, 2010; Wampold & Freund, 1987; and Wang & Schaalje, 2009).

The outcome from the regression model used in this study resulted in a low $R^2 = 0.174$ that was less than expected; this result indicated a poor model fit. However, this finding aligned with the body of literature on the statistical significance. The outcomes of this study had similarities to studies conducted by Dancer and Tremayne (2005), Noe and Wilk (1993), and Mares and Rosenheck (2006). In these three studies, the researchers examined the relationships between the independent and dependent variables, and found a significant relationship between the variables despite the occurrence of a low R^2 value.

The findings in this study closely align with a study conducted by Mares and Rosenheck (2006), who found employees' attitudes towards employment were

significantly associated with employment outcome development. Mares and Rosenheck indicated that the small effect sizes related to the 1% variance in their results. Notwithstanding the low R^2, the relationship between employees' attitude and employees' employment (the test variables) was the most important factor in their findings.

Similarly, Noe and Wilk (1993) examined the factors influencing employees' participation in development activities using data collected from employees in health maintenance (n = 343), financial services (n =196), and public sector engineering firms (n = 496). Noe and Wilk hypothesized that the influence of self-efficacy and work environment perceptions on development activity related to learning attitudes, perceptions of development needs, and perceived benefits of the employees. The results from the Noe and Wilk study showed a low level of R^2 that was statistically inadequate. However, their findings indicated the independent variables (motivation to learn, perception of benefits, and work environment perceptions) had significant and unique effects on the dependent variable. The findings in this present study mirrored those of Noe and Wilk's investigation.

Two researchers, Dancer and Tremayne (2005), conducted a study on cross-section applications analysis of R^2 and prediction in regression with ordered quantitative variables. According to Dancer and Tremayne, frequently the coefficient of multiple regression will be lower since the significance between the variables determines model fit, rather than the precise predictions resulting from the model used. In other words, the value of R^2 might increase incrementally with concomitant increases in the number of

variables. The result from Dancer and Tremayne's (2005) study indicated that precise predictions of the variables could be contradictory when the coefficient is poor in relation to model fit. They concluded that despite the low R^2, the result provided useful predictions about the relationship between variables; another similarity to the results of this study.

Pallant (2009) noted that results with the low value of R^2 may not necessarily suggest that the variables are statistically insignificant. When the focus of the examination is to determine the existence of relationships or the extent to how the changes in the independent variables are related to the changes in the dependent variable, statistical significance remains intact (Pallant, 2009). The purpose of this study was to examine relationships between the independent variables and the dependent variable rather than make predictions; this is consistent with Pallant's view. Despite the low values of R^2, the statistical significance of the results indicated relationship between independent variables and the dependent variable, which was the primary objective. In this study, there was no stated intent to use the independent variable to precisely predict the dependent variable.

The findings in this study aligned with the body of literature on support for innovation and creativity, organizational commitment, resistance to change, and employees' motivation. In relation to the employees' support for creativity and innovation, and employees' motivation, I highlighted similarities in the findings that linked the results of this study to studies conducted by Im, Montoya and Workman (2013) and Iqbal (2011). In these two studies, the researchers examined the linkage

between the role of employees' creativity and team dynamics in adopting innovation, and found a significant relationship between employees' support for creativity and innovation, and motivation.

The findings in this study are similar to findings by Iqbal (2011). Iqbal found an interchangeable use of the concepts of creativity and innovation in literature pertaining to organizational development. The results from Iqbal's study indicated that workforce creativity and innovation was the most important factor in predicting the employees' effectiveness. Similarly, Carol and Feng-Chuan (2012) examined climate of innovation and employees' motivation with data collected from 398 participants. Carol and Feng-Chuan used different instruments (KEYS and Job Diagnostic Survey for Motivation), a different geographical region, and a larger pool of participants. Though Carol and Feng-Chuan used a cross-level analysis to examine the mediating effect of work motivation on the creativity climate-innovation relationship, their findings indicated a significant correlation that explained the positive relationship between innovation creativity climate and work motivation in an innovation-active environment. The findings in this study mirror those of Carol and Feng-Chuan.

Çokpekin and Knudsen (2012) argued that the relationship between employees support for innovation and creativity, and motivation is dependent on the work environment, and other characteristics that affect employees' motivation to support innovation. In contrast to the findings highlighted in Table 8, Çokpekin and Knudsen found an indeterminate relationship between creativity and innovation, and employee motivation. The focus of the Cokpekin and Knudsen study was the importance of

employees support for innovation and creativity in organization successes.

A finding from another study conducted by Escribá-Esteve and Montoro-Sánchez (2012) on creativity and innovation in a firm contrasted with the findings in this study. Escribá-Esteve and Montoro-Sánchez indicated a negative relationship existed between employees' support for creativity and innovation, and motivation. According to Escribá-Esteve and Montoro-Sánchez, there was a positive relationship between employees' support for creativity and innovation, and motivation. Escribá-Esteve and Montoro-Sánchez (2012) argued that innovations associated with deploying new technology often lead to negative outcomes such as drastic cuts in the workforce that affect the adoption of innovation in the firm. Despite these divergent views, the findings in this study are similar to the body of literature on support for creativity and innovation, and motivation. I used the findings in this study to confirm that a significant relationship exist between employees support for creativity and innovation, and organizational effectiveness. The findings of Escribá-Esteve and Montoro-Sánchez offered confirmatory evidence of the role of employees in organizational effectiveness. However, the findings in this study closely align with the body of literature (Ahuja & Gautam, 2012; Hegazy & Ghorab, 2014; Ince & Gül, 2011; Kataria, Rastogi, & Garg, 2013; Shahid & Azhar, 2013).

Organization commitment, as a variable in this study, yielded a negative slope and the result indicated a relationship that was statistically, a significant (Beta = -.221, *p*-value = 0.044 < 0.05). Previous research by Albdour and Altarawneh (2014), Mahanta (2012), and Spangenburg (2012) on employees' engagement and organization change focused on organizational commitment and innovation change. In these studies, Albdour

and Altarawneh (2014), Mahanta (2012), and Spangenburg (2012) highlighted organization commitment as vital for managing innovation practices to support change, that were similar to the findings in this study.

Aisha and Hardjomidjojo (2013), Barthwal and Som (2012), and Nafei (2014) examined the linkage between employees' attitude, organizational commitment, and innovation in creating an environment that supported the firm's values. The study by Barthwal and Som (2012) included data from 300 participants, and the researchers described organizational commitment as the most significant construct in organizational behavior. The results of the Barthwal and Som study indicated a significant correlation between organization commitment and employees' motivations; findings in the study were similar. Another study that relates to this study's findings focused on organizational commitment, relationship orientation and employee receptiveness to innovation (King & Grace, 2012). King and Grace (2012) examined employee behaviors in relation to organizational commitment using data collected from 371 participants. The results of the study by King and Grace were significant and similar to findings in this study.

In this study, the results of the analysis of resistance to change were not statistically significant because the variable had no significant relationship with employees' motivation (Beta = -.030, p-value = 0.776 > 0.05). A study by Bateh, Castaneda, and Farah (2013) can relate to this study's findings on the topic of resistance to organizational change. The results of the Bateh et al. study indicated that resistance to change was not a significant factor in organizational change. Additionally, Bateh et al. revealed that resistance to organizational change was a complex set of interacting

elements that occurred during the change process; these elements had the potential to speed up, slow down, facilitate, or hinder the change process.

A study by Nesterkin (2013) on employee resistance to organizational change revealed that negative effects were likely to be strong predictors of psychological reactance, and were likely to undermine change considerably. Nesterkin (2013) linked the motivational behavior of telecom employees' to adoption of innovation. Although Nesterkin (2013) used a qualitative method and the conceptual lens of the reactance theory, the outcomes were dissimilar to the findings of this study. Kunze, Boehm, and Bruch (2013) indicated a negative relationship existed between resistance to change and individual effectiveness. The Kunze et al.'s study measured employees' successful goal accomplishment in relation to resistance to organization change; the results paralleled the outcomes in this study.

Arora (2013), Boniface and Rashmi (2012), Heeks (2013), and Ma (2013) conducted examinations focused on employees' resistance to change. In each of these studies, researchers examined the uncertain and complex outcomes of innovation. Specifically, the investigators focused on the reduction of workforce through automations to achieve competitive advantage in various studies relating to technology. Findings in these studies indicated there was a negative relationship between resistance to change and employees' motivation in organizations undergoing technological changes. Additionally, researchers noted that employees' evaluative attitudes towards organizational commitment were critical for managing organizational change and employees' acceptance of change (Nafei, 2014). The findings in studies by Arora (2013), Boniface

and Rashmi (2012), Heeks (2013), and Ma (2013) did no relate to this study's findings. However, given employees' perception of automation in the telecom service operations, the accompanying uncertainties remain a concern for employers.

A finding from the study conducted by Wagner and Garibaldi (2014) on employees' resistance to organizational change contradicted the findings of this study. Wagner and Garibaldi (2014) indicated there was a significant and positive relationship between employees' resistance to organizational change. Wagner and Garibaldi argued not all organizational change or processes caused permanent negative effects, nor were these changes perceived as strong or lasting sources of uncertainty by the employees of the involved. Wagner and Garibaldi (2014) also maintained employees' perceptions of working conditions at the time the change process occurred could largely dictate a negative or positive impact on the human factor (Wagner & Garibaldi, 2014).

Ties Findings to the Theoretical Framework

Diffusion of innovation was the theoretical framework applicable to this study. Flight et al. (2011), in a study on the perceived innovation characteristics across cultures and stages of diffusion, used the diffusion of innovation theory to conceptualize the advantages of innovation as a competitive organizational strategy. Kuo, Liu, and Ma (2013) successfully tied their study's findings on the effect of nurses' technology readiness on the acceptance of mobile electronic medical record systems to the theoretical framework. Kuo et al identified a link between the adoption behavior of innovative IT employees and the diffusion of innovations. Kuo et al.'s investigation involved constructs usefulness and ease of use for predicting individual's acceptance of technologies,

constructs that bear similarity to those tested in this study. These factors are fundamental to understanding the relationships between these variables. Generally, this study was consistent with the existing literature on the theoretical framework (Akça & Özer, 2014; James, 2013; Makó, Csizmadia, Illéssy, Iwasaki, & Szanyi, 2013; Rambocas, & Arjoon, 2012; Rogers, 2003). The results of this present study confirm a positive relationship with support for innovation and creativity (Beta = 0.302, and *p*-value = 0.005 and organizational commitment (Beta = -.229, and *p*-value = 0.032).

The findings in this study predicted the positive role of individuals support for creativity and innovation and organizational commitment, and change management. In studies by Byoung, Hyoung, and Ko (2013), Caraballo and McLaughlin (2012), Plewa, Troshani, Francis, and Rampersad (2012), and Yan and Yan (2013) on the adoption of innovation and organization innovation climate, researchers confirmed that support for innovation and creativity, managing resistance to change, and organizational commitment are important elements for moderating employees' motivation, and achieving organizational effectiveness. The findings of this study highlighted the relevancy of diffusion of innovation theory in explaining telecom employees' attitudes for innovation. Researchers like Castellano, Ivanova, Adnane, Safraou, and Schiavone (2013), Lin, Lin, and Roan (2012), and Patsiotis, Hughes, and Webber (2013) used the innovation diffusion theory in their investigations on support for innovation and creativity, and individual adoption behavior. The application of the theoretical framework used in this examination of telecom employees' adoption behavior aligns with how previous researchers applied the same theory.

Lin et al., 2012 revealed a relationship between innovation adopter behavior, elements positively affecting the behaviors, and why an individual actually adopts, or resists, an innovation. Lin et al.'s findings relate to the outcomes and purpose of this study. Notwithstanding that this quantitative correlational study was conducted with a small, representative sample of 81 telecom employees in the United States, the results from the multiple regression model confirm the relationship between support for innovation and creativity, organizational commitment, and employees' motivation.

Ties to Literature on Effective Business Practice

Aisha and Hardjomidjojo (2013), Barthwal and Som (2012), Carol and Feng-Chuan (2012), Çokpekin and Knudsen (2012), and Im et al. (2013) acknowledged the importance of employees' motivation, support for creativity and innovation, and organization commitment, especially in an organization undergoing technological transformation. In each of these studies, researchers proffered confirmatory evidence about the relationship between employees' motivation and the organization's effectiveness. Fernet, Austin, and Vallerand (2012) distinguished that employees motivation stemmed from management practices targeted at enhancing employee's behavior in acceptance of tasks or work based on the expected benefits for undertaking the task. The consequences of low levels of employee motivation included diminished efficiency (Frye, 2012); whereas high levels of employee motivation enhanced participation during the introduction of new technology. De Menezes (2012) claimed an absence of managerial options to enhance workers' motivation related to the infusion of technology in the workplace exacerbated the employee's resistance to support the change.

The multifaceted complexities associated with introducing innovation in telecom service centers require the understanding of employees' expectations, organizational commitment, and management skills, to alleviate the ambiguous outcome of the introduced change (Oreg, 2003; O'Reilly & Chatman, 1986; Scott & Bruce, 1994; Tremblay et al., 2009). Workers require a climate that supports creativity and innovation; concomitantly, this climate can enhance a manager's ability to moderate employees' resistance to innovation (Byoung, Hyoung, & Ko, 2013; Caraballo & McLaughlin, 2012; Plewa, Troshani, Francis, & Rampersad, 2012; Yan & Yan, 2013). Dhammika, Ahmad, and Sam (2012), Lau (2012), Mohsin and Muhammad (2011), and Yücel (2012) conducted various studies on employees' satisfaction and organizational commitment; these researchers demonstrated a positive trend for employees support for creativity and innovation with a moderate increase in motivation. Additionally, organization commitment correlated positively with employees' motivation, while resistance to change was not a significant factor as this variable had a negative correlation. These findings are of import to managers as the results of this study might offer guidance in plan development and implementation strategies. Implementing innovation must occur in a balanced manner if the goal is to maintain a highly motivated and participatory workforce.

Support for creativity and innovation competencies relate to how employees perceive the innovation and to the employees' perceptions of the outcomes (Woltz et al., 2012). The negative outcomes associated with innovation (downsizing, outsourcing, and retraining) affects workers' emotional commitment and causes employees to withdraw

support from managers' strategic goals (Gong & Greenwood, 2012; Sitlington & Marshall, 2011). Employees' resistance to change affects workers' efficient use of tacit knowledge to address service related problems, thus reducing efficiency and productivity (Mahajan et al., 2012; Patterson & Baron, 2010). Workplace hostility increases stress among workers, lowers morale, and increases fear among employees, when the use of innovation is perceived as a selfish scheme to improve operations (Das, Kumar, & Kumar, 2011; Vicente-Lorente & Zúñiga-Vicente, 2012). Based on the findings, workers support for creativity and innovation and organizational commitment correlate with motivation positively. The findings in this study corroborated Reiner's (2011) study that included the manager's role in leading innovation in the context of organizational behavior. Though this study included only a small sample of telecom employees, the findings have practical value for business leaders and managers of companies (McDaniel, 2011; Taneja et al., 2013). Managers in the service industry could use these results to expand their perceptions and appreciation for the effects of innovation from a nonmanagement perspective.

Applications to Professional Practice

The findings of this quantitative correlational research could benefit telecom managers and organizational leaders in evaluating management practices and strategies used for moderating employees' behavior during change technologically based change processes. Managers outside the telecom industry could use this study to understand the relationship between diffusion of innovation and employees' motivation, and understand employees' perceptions of innovation. The negative slope in resistance to change

indicated that the predictor variable resistance to change was not statistically significant in this study; this finding may not hold true for all companies. However, Mahajan et al. (2012), and Patterson and Baron (2010) studies on organizational commitment and employees' participation indicated that low employees' motivation often leads to sabotage, distrust for management, and contributes to the development of a hostile workplace. According to Mahajan et al., and Patterson and Baron, low motivation among employees leads to reduced productivity, poor service quality, and organizational failure in some cases. Managers could use the study's results to gain insights about the relationship between organizational failure and employees' resistance to change. Furthermore, the relationships between the variables, coupled with the statistical significance of the results, gives telecom managers reliable information to understand and address the negative effects of an unmotivated workforce on organizational effectiveness and implementation of innovation.

Implications for Social Change

The findings of this study are important for managers who oversee the implementation of new technologies. Typically, managers' intent is to achieve a competitive advantage. The outcomes of this study could contribute to positive social change if managers use these results to increase employees' motivations to support innovation in telecom businesses. Managers and organizational leaders could use the findings from this study to explore and develop new strategies that could increase employees' motivation, and moderate uncertainties. In the telecom industry, moderate uncertainties can include drastic layoffs that may fuel the development of a hostile work

environment. Social change occurs when the application of knowledge brings about reasonable differences for individuals and communities. Moreover, positive social change occurs when people use new knowledge to create benefits or affect individual behaviors and prospects. Given that the overall R^2 in the model was inadequate and a poor predictor of motivation, incorporating more motivational related variables in future studies might give managers more useful findings. Future studies of the type described here might increase managers' understanding of employees' innovation adoptive behaviors in a telecom company while adding to the literature on employees' motivation, change management, and organizational development.

Managers could use the findings of this study to expand their knowledge of employees' resistance to innovation. Specifically, managers could use these findings to enhance their knowledge of the strategic roles workers play in business failures or successes. New knowledge may help managers develop options that might increase the telecom workforce's responsibility with respect to company goals. Telecom companies' managers operating in United States could rely on the findings of this study to refine strategies for adoption of innovation so that new technologies become attractive to employees. Implementing the types of changes recommended here might also increase employees' personal development in preparation for future innovative changes.

Managers and organizational leaders could use the findings from the study to advance their appreciation of strategies for improving performance in areas of service qualities, employees' motivations, and employees' negative perception innovative changes that affect the socio-economic values of communities. One of the uncertainties

associated with technological implementation is the resulting unemployment from managers' decisions to downsize the workforce. Managers can use the results from this study to develop strategies that create jobs or increase the value of individuals' career prospects.

Recommendations for Action

Executive managers and organizational leaders could use the findings from this research as a reference for developing management training and action plans on strategies for moderating employees' behavior in an innovation-charged environment. One recommendation for action could involve the creation of an educational guidebook to instruct managers on their (managers') responsibilities and expectations in influencing employees' motivations. Managers and business owners could use the findings in this study as an aid to identify (a) potential obstacles for introducing innovation, or (b) factors that might increase the tendency of employees to resist innovation as a change. Another recommendation for action could involve the proactive engagement of organization leaders who are responsible for identifying the roles of employees and managers in change management, value identification, assignment of tasks, and removal of obstacles that might interfere with employees' ability to achieve goals.

Business leaders and managers could gain an understanding of how diffusion of innovation might occur in different settings based on the information derived from this study. Managers and leaders who can recognize the various aspects of introducing technology on human behavior might be able to improve organizational effectiveness. Given that overall R^2 to explain the model indicated a poor model fit in predicting

employees' motivation. The information derived from this study could help managers understand the relationships between these variables, thus improving decision-making related to the utility of best management practices when adopting innovation (Denning, 2010). Manager's abilities to moderate employees' behaviors and to increase employees' performance can enhance companies' strategies to achieve business objectives for increased productivity.

The distribution of the findings in this study through organizational learning, telecom publications, and professional societies' electronic libraries could benefit telecom professionals by providing a new understanding of adoption of innovation. The findings of this study contain quantitative procedures and discussions that may encourage scholarly expansion in areas recommended for further research. Therefore, academic communities and research scholars could benefit from the publication of these findings in the proQuest dissertation database. Additionally, publication of the findings of this study in journals of academic institutes, professional organizations, conferences, and seminar papers on organizational behaviors, organizational development, leadership, and management are appropriate and accessible to business practitioners.

Recommendations for Further Study

The significant variables (support for innovation and creativity and organizational commitment) together with overall R^2 showed the model to be inadequate for predicting motivation. Addressing these inadequacies will require future researchers to incorporate other variables such as rewards and incentives, team building activities, participation, recognition of individual differences, performance pay, enhanced communication and job

enrichment (Uzonna, 2013). Achieving a higher R^2 that could enhance manager's use of the model to predict employees' motivation.

There were two limitations identified in this study. First, the use of data collected from participants who work in telecom organizations to examine the relationships between the variables was a limitation in this quantitative correlational study. Addressing this limitation might occur if a researcher uses participants from a variety of settings in future studies. Second, the sincerity and honesty of the study's participants in responding to the survey questions was a limitation. The accuracy of the instruments used to measure the variables was also a limitation. Using a qualitative approach to explore the linkage between the variables identified in this study could address these two limitations. Finally, only line supervisors and nonmanagement employees could participate in this present study limited generalizability across the organizational hierarchy. Researchers might address this limitation by including telecom managers who are in leadership positions as participants to examine differences that might exist along the organizational hierarchy within a single company.

I recommend repeating this study in another country using the same variables to determine if locality and culture have an effect on the relationships between innovation adoption and individual preferences. The focus of this study was to examine the relationship between the research variables (support for innovation and creativity, resistance to change, and organizational commitment, and the dependent variable is employee motivation). Researchers could conduct intrusive examinations of each of the independent variables to establish relationships with the dependent variable.

Reflections

I was the sole researcher in this study and had no control over the telecom company's leaders, or their commitment to providing me with a letter of cooperation (see Appendix F) or timely permission to include their employees in this study. Completing the project took longer than expected; I scheduled and attended 12 meetings with telecom leaders to get the approval to access participants. The biggest disappointment was that I had a verbal guarantee of cooperation, yet it took more than a month to get the formal letter of cooperation. I later learned that the company's executives had concerns about the information contained in the survey. After securing approval from the company's representative, I e-mailed letters of introduction (and invitation) to 285 prospective participants.

Collecting data from the participants was problematic because response was slow. Since I had no influence on the participants' timely disposition in responding to the survey, all I could do was to send e-mail reminders and wait for responses. Overall, I acquired sufficient surveys to conduct the study; I had difficulty recruiting the minimum number of participants initially. For instance, some participants' who agreed to participate in the study submitted requests not to use their company's e-mail addresses, and other participants who agreed to participate initially, withdrew from the research for personal reasons. During the data collection phase, several participants provided incomplete responses, and a few participants completed the survey without consenting to the disclosure form, thus invalidating their surveys.

Summary and Study Conclusions

The fundamental objective of this quantitative study was to examine the relationship between variables involved in managing the adoption of innovation in telecom service companies in the United States. The findings linked to literature relating to the variables and the selected theoretical framework. Based on the findings of the study, the significant variables together with overall R^2 to explain the model indicated the inadequacy of the model in predicting employees' motivation. A positive relationship exists between support for innovation and creativity, organization commitment, and employees' motivation; thus leading to the rejection of the null hypothesis. A negative relationship exists between resistance to change and employees' motivation. Incorporating additional variables such as rewards and incentives, team building activities, participation, recognition of individual differences, performance pay, have the potential to enhance communication and job enrichment (Uzonna, 2013). Comprehensive investigations using multiple variables could result in a higher R^2 and thus be more predictive of employee motivation. Employees' motivation is critical for business success; promoting strategies that moderate individual support for innovation and creative enhances organizational effectiveness.

In linking the findings of this study to scholars' views on adoption of innovation, I used diverse discussions from studies to support and contrast the results. This study offered the basis for continuing discussions on features of innovation creativity climate, role of employees, and the strategic role of managers in moderating resistance to change. Therefore, an appreciation of how adopters comprehend the organizational innovation

through this quantitative study provides opportunities for improved management practices in addressing the conflicts. The theory of diffusion of innovation, as developed by Rogers (2003), in conjunction with the findings from the regression models, provided valuable context for examining innovation adoption in the telecom service center in this study.

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Appendix A: Request and Permission to use Climate for Innovation Measure

Subject :Re: Request for Permission to use the Instruments in your article

Date : Wed, Jul 10, 2013 09:47 AM CDT
From : "Susanne G. Scott"
To : Samuel Ude
CC :

Dear Samuel:

You have my permission to use the Climate for Innovation Measure for your dissertation research. All available material on the study is contained in the original published article. The article has been widely cited, and there is significant additional research available that can be easily located through numerous sources.

Sincerely,

Susanne G. Scott

From: "Samuel Ude"
To: Susanne Scott
Sent: Tuesday, June 4, 2013 12:04:29 AM
Subject: Request for Permission to use the Instruments in your article

Dear Professor Scott

My name is Samuel O. Ude a doctoral candidate at Walden University. I am writing you to humbly request for a written statement granting me permission to use the instrument in your article –

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal, 37*(3), 580-580.

My study is titled "Application Innovation and Employees' Trust in a Telecommunication Operations Team". This is a quantitative correlational study with a focus to examine if employees resistance to innovation have a direct relationship to service quality. The instrument below will be very crucial in examining the variables for relationships.

Table 1- Factor Structure of the Climate for Innovative Measure on page 593

The use and application of your instrument in this study will be most desirable in examining employees' perception of innovative change in telecom organizations. I will be most grateful if your respond and grant me using the permission to use the instrument
Thank you!

Samuel Ude, MAPD, BSc
Doctoral Student
Walden University
School of Management and Technology

Susanne G. Scott
Associate Dean of the Charlton College of Business
University of Massachusetts Dartmouth

Appendix B: Request and Permission to use Resistance to Change Scale

Subject Re: Request for permission to use the instruments in your article

Date : Mon, Jun 03, 2013 11:49 PM CDT

From : Shaul Oreg

To : Samuel Ude

You may feel free to use the instrument. Best of luck with your research,

Shaul Oreg

On Jun 4, 2013, at 7:10 AM, Samuel Ude wrote:

Dear Doc Oreg

My name is Samuel O. Ude a doctoral candidate at Walden University. I am writing you to humbly request for a written statement granting me permission to use the instrument in your article – Oreg, S. (2003). Resistance to change: Developing an individual differences measure. *Journal of Applied Psychology*, *88*(4), 680-693. doi:10.1037/0021-9010.88.4.680.

My study is titled "Application Innovation and Employees' Trust in a Telecommunication Operations Team". This is a quantitative correlational study with a focus to examine if employees resistance to innovation have a direct relationship to service quality. The instrument below will be very crucial in examining the variables for relationships.

Table 1- Resistance to Change Factor Loadings for the Final Item Pool Exploratory Factor Analysis on page 682

The use and application of your instrument in this study will be most desirable in examining employees' perception of innovative change in telecom organizations. I will be most grateful if your respond and grant me using the permission to use the instrument

Thank you!
Samuel Ude, MAPD, BSc
Doctoral Student, Walden University
School of Management and Technology

Appendix C: Request and Permission to use Organizational Commitment Scale

Subject Re: Permission to Use Your instrument

Date : Sat, Mar 08, 2014 02:12 PM CST

From : Jennifer A Chatman

To : Samuel Ude

Hi Samuel,
The instrument is, by virtue of being published, in the public domain so you are welcome to use it with the appropriate citation. Best of luck with your work!

Jenny

Jennifer A. Chatman
Paul J. Cortese Distinguished Professor of Management
Haas School of Business
University of California

From: Samuel Ude
Date: Saturday, March 8, 2014 10:30 AM
To: Jenny Chatman
Subject: Permission to Use your instrument

Dear Professor Chatman,

My name is Samuel O. Ude, a doctoral candidate at Walden University. I am humbly seeking your permission and consent to use the instrument on page 494 of your journal "Varimax Factor Loadings for Commitment Dimension. I found the instrument in one of your published journals "O' Reilly, C., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of Applied Psychology*, *71*(3), 492-499. "

My study is on "Application Innovation and Employees' Trust in a Telecommunication Operations Team". This is a quantitative correlational study designed to examine the relationship between perception and support for innovation, tolerance to change, organizational commitment, and employees' motivation in the telecommunication outfit. The instrument will be very crucial in evaluating the constructs in the study.

I am thanking you in advance for granting me permission to use the instrument

Thank you!
Samuel Ude, MAPD, BSc

Appendix D: Request and Permission to use WEIM Instrument

Subject RE: Request for Permission to use the Instruments in your article

Date : Mon, Jan 06, 2014 05:30 AM CST

From : Celine Blanchard

To : Samuel Ude

Dear Samuel,

Thank you for your email and interest.

Yes, you certainly have my permission to use the instrument.

Best regards,

Céline Blanchard

Céline Blanchard, Ph.D.

School of Psychology École de psychologie

University of Ottawa Université d'Ottawa

Faculté des sciences sociales Faculty of Social Sciences

From: Samuel Ude
Sent: 27 décembre 2013 15:36
To: Celine Blanchard
Cc:
Subject: Request for Permission to use the Instruments in your article

Dear Professor Blanchard,

My name is Samuel O. Ude a doctoral candidate at Walden University. I am writing you to humbly request for a written statement granting me permission to use the instrument in your article –Tremblay, M.A., Blanchard, C.M., Taylor, S., Pelletier, L.G., & Villeneuve, M. (2009). Work extrinsic and intrinsic motivation scale: Its value for organizational psychology research. *Canadian Journal of Behavioural Science*, *41*(4), 213–226.doi:10.1037/a0015167

My study is titled "Technological Change and Employees' Motivation in Telecom Operations Team". This is a quantitative correlational study with a focus to examine if

employees resistance to innovation have a direct relationship to service quality. The instrument listed below will be very crucial in examining the variables for relationships.

Appendix 1 - The Work Extrinsic and Intrinsic Motivation Scale (WEIMS) on page 226

The use and application of your instrument in this study will be most desirable in examining employees' motivation in telecom organizations undergoing of innovative change. I will be most grateful if your respond and grant me using the permission to use the instrument

Thank you so much for your considerations

Samuel Ude, MAPD, BSc

Doctoral Student
Walden University
School of Management and Technology

Appendix E: Ethics Confidentiality Disclosure Consent

Use of Technological Innovation in Telecom Center

Greetings Telecom Employee

You are welcomed to partake in a research study because the researcher considers your role as an employee of a telecom company with experiences in computer technologies and innovation practices as a good fit for this study. This form is part of a process called "informed consent" that allow you to understand this study before deciding whether to take part. The researcher will examine innovation causes that influence telecom workers (IT) work motivation.

The title of the research study is Technological Change and Employees' Motivation in Telecom Operations Team. My name is Samuel Ude; I am the sole researcher and a student in the Walden University Doctor of Business Administration program. The researcher is an employee of the company in the role of Application Vendor Manager. This study is strictly for academic research and totally separate from my role; therefore, the researcher will not have any direct or indirect access to coerce, influence, or interfere with your participation in this study.

Background Information:
The purpose of this study is to improve understanding of innovation practices that might affect telecom employees' motivation. Your perception for innovation environment, resistant to change, organizational commitment, and job motivation will be examined. For the purpose of this study, innovation is defined as a new idea, tool, systems, or changes that are introduced to enhance both work process and level of service quality.

Procedures and Eligibility:
If you agree to participate in this study, you may be asked to respond to some online survey with multiple-choice questionnaire. The online survey will take approximately 25 minutes to complete. You must be (a) 18 years of age or older, (b) employed with a telecommunication company in the United States, and (c) currently employed in an IT organization where innovative changes is used in the business processes to participate in this research.

Risks and Benefits of Being in the Study:
There are no identified hazards or danger for participating in this study. The study has the potential benefits of bringing positive social change by contributing to the field of business, management and education; the findings may also provide telecom middle managers' with strategies that may be used in introducing innovative change while promoting more favorable working conditions. The advantages of participating in this study includes; (a) volunteering to become an agent in promoting social change through your participation in this research, and (b) the study comes with an opportunity for you as a participant to understand the role of innovation in the workplace and its effects on employees like yourself.

Voluntary Nature of the Study:
Your participation is voluntary. There is no incentive or reward to participate in this study. Your right to decline participation or withdraw from participating is by declining or not accepting invitation. There is no penalty for declining to participate or to withdraw at any time from the

study. Declining or discontinuing will not negatively impact the participant's relationship with the researcher or (if applicable) the participant's access to service.

Privacy:
Your right to participate will be private, protected, and anonymous. Information pertaining to your name or anything that could identify you will be anonymous, and will not be collected. The researcher will not use your personal information for any purposes outside of this research project. Five years after the end of this study, I will completely shred and erase all records pertaining to the data collected for this study.

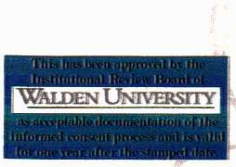
Payment and Compensation:
No compensation or payment will be offered for participation in this research.

Contacts and Questions:
You may ask any questions you have now. On the other hand, if you have questions later, you may contact the researcher via [redacted] or email addresses [redacted] or [redacted]. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 312-1210. Walden University's approval number for this study is **09-10-14-0080869,** and it expires on **September 9, 2015.**

Please print or save this consent form for your record. If you agree to participate in this research study, kindly click the box below. The survey will be open for 14 days. Please click on the link to participate.

Statement of Consent:

I have read the above information, and I feel I understand the study well enough to make a decision about my involvement. By clicking the words, "YES," I understand that I agree to the terms described above.



2014.09.10 16:55:29 -05'00'

Appendix F: Letter of Cooperation from a Community Research Partner

Letter of Cooperation from a Community Research Partner

[redacted]

September 14th, 2014

Dear Samuel O Ude,

Based on my review of your research proposal, I give permission for you to conduct the study entitled ***Technological Change and Employees' Motivation in Telecom Operations Team*** using participants who are affiliates and employees of telecom organizations in our consulting service. Individuals' participation will be voluntary and at their discretion.

As part of this study, I authorize you to

1. Use our email directory to contact potential participants.
2. Gain each participant's consent.
3. Collect the requested data, and
4. Disseminate the study's results and findings to all stakeholders.

I understands that the organization's responsibilities include maintaining the confidentiality of data and restricting the sharing of data and results outside the specific purpose of this study. The organization, or its affiliates, and employees reserve the right to withdraw from the study at any time if circumstances change. The dissemination of research materials, study results, or data set must also comply with guidelines of Walden University.

I confirm that I am authorized to approve the execution of this study in this setting.

Sincerely,

[redacted]

NOTICE: Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be a person's typed name, their email address, or any other identifying marker. Walden University staff verifies any electronic signatures that do not originate from a password-protected source (i.e., email address officially on file with Walden).

Appendix G: Letter of Introduction

Dear <Participant>:

I am Samuel Ude, and I am carrying out a survey as part of the academic requirements for my doctorate.

This letter is an invitation to participate in a study on the relationship between innovation and employees' motivation, which telecom employees can encounter or feel when using new or adopting new technologies in the workplace. The study group is IT professionals in located in a telecommunication company in the United States.

The study takes only 25 minutes or so of your time.

You are selected to participate in this research because you are employed with a telecommunication company in the United States, and currently employed in an IT organization where innovative changes is used in the business processes. As a result, you meet the initial eligibility requirements to partake in this research. The chairperson of my research committee is Dr. Ify Diala and can be contacted by email at xxxx.xxxx@xxx.xxx

I am currently employed in the telecommunication company's IT organization and as an employee; I appreciate the importance of your time.

This voluntary study involves the participation of 60 or more eligible employees who (a) work in the telecommunication service industry, (b) employed with IT related organization, and (c) use technology such as enhanced computer applications or, or other similar innovative technologies to do their job. There is no money compensation for your participation; however, I am very appreciative for your involvement. All information is kept strictly confidential, and I will keep all data well secured and password protected.

The purpose of this quantitative correlational study is to assist organizations in the telecommunication industry appreciates the effects new or changing technologies have on employees' motivation. The number of managers and employees may have experienced difficulties in championing and adopting technological changes because of the negative perception, which may include stress, anxiety, and frustrations in adopting the new technologies at work. By understanding these effects, organizations can initiate programs to minimize the wrongfully perceived introduction of new technologies by their employees and increase the benefit these technologies provide.

To volunteer to participate in the study, please click on the link for the online location of the survey http://fluidsurveys.com/s/Innovation_and_Employees_Motivation/. The first two pages of the survey are the participant consent form. In the last part of the form, you will be asked to consent to the terms outlined in the form. I will not collect any information that will identify you or your organization during the data collection phase or any part of this study.

Thank you for partaking in this significant study.

Samuel Ude
Doctor of Business Administration (candidate)

Appendix H: The National Institutes of Health (NIH) Certification

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Samuel Ude **successfully completed the NIH Web-based training course "Protecting Human Research Participants".**

Date of completion: 09/16/2011
Certification Number: 759613