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Organizational Innovativeness Among Employees in an IT Operations Organization: A Self-Determination Theory Perspective

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Organizational Innovativeness Among Employees in an IT Operations Organization: A Self-Determination Theory Perspective

by

Darrell David Crull

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctorate in Business Administration

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY

ROBINSON COLLEGE OF BUSINESS

2020

ACCEPTANCE

This dissertation was prepared under the direction of the DARRELL DAVID CRULL Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

Richard Phillips, Dean

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ABSTRACT

Organizational Innovativeness Among Employees in an IT Operations Organization: A Self-Determination Theory Perspective

by

Darrell David Crull

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Chair: Wesley J. Johnston, Ph.D.

Major Academic Unit: Doctorate in Business Administration

According to research, organizational innovativness is a key component in a firm's short- and long-term success. How a firm achieves organizational innovativenss is a hotly debated topic. While much of the literature focuses on sales, marketing, and other customer-facing departments, I investigate network administrators and system administrators in the IT operations deparments of firms. In this study, I propose several factors that lead to organizational innovativness by focusing on the IT operations department. Self-determination theory (autonomy, competence, and relatedness) and job attitudes (intention to stay, job satisfaction, and organizational commitment) are utilized to determine job performance and organizational innovativness. Motivation is evaluated as a moderator to determine if the strength of the relationships between constructs changes when employee motivation is considered. My research answers the following question: How and why does self-determination impact employee performance and innovation in IT operations organizations?

The study results provide evidence that, while the constructs of self-determination theory do influence job performance and organizational innovativness, motivation does not represent a significant moderating effect in this framework. This indicates once autonomy, competence, relatedness, job satisfaction, and organizational commitment are embedded in an organization, taking measures to add motivation may be a waste of time. The other finding to highlight is that intention to stay did not have a

significant effect on job performance. This is likely due to employees not intending to stay at a firm are not interested in performing at a high level or if they are performing optimally, they may be taking the skills they learned and looking for employment elsewhere.

This study provides a contribution to theory by aligning the constructs of self determination theory and job attitudes as validated predictors of job performance and organizational innovativness. This theoretical framing has not been presented in the past and also not applied to a setting such as IT operations. This framework can be applied to other organizational departments outside of IT operations.

From a practitioner viewpoint, this study highlights how management and human resources departments can provide monitoring and ongoing support focused on instilling autonomy, competence, relatedness, job satisfaction, and organizational commitment as antecedents to job performance and ultimately organizational innovativness.

The data from this research study can enable leadership and human resources departments to make more informed decisions regarding motivational techniques within the IT operations departments.

Keywords: Self-determination Theory, Organizational Innovativness, Job Attitudes, Success, Network Administrators, System Administrators, Autonomy, Competence, Relatedness, Intention to Stay, Job Satisfaction, Organizational Commitment, Employee Motivation, IT Operations, Leadership, Human Resource Departments, Employee Performance

I CHAPTER 1: INTRODUCTION

I.1 Background

Organizational Innovation refers to new ways work can be structured and preformed within an organization to promote competitive advantage. It entails how organizations and individual employees, specifically, facilitate work processes in areas such as employee performance, knowledge management, and ultimately customer relationships and retention. At its core, organizational innovation is the desire to enhance or alter a product, process, or service. While all innovation focuses on change, not all change is innovative or productive. Organizational innovation promotes independent and creative thinking to resolve issues. Employee knowledge is harnessed to foster an environment of innovation through problem solving. New ways of doing business are created and outdated or ineffective procedures are retired by adopting an organizationally innovative mindset.

Within the information technology (IT) sector, customer satisfaction is highly reliant on product innovation. New products are created constantly to drive adoption, revenue, and customer retention. Organizational innovation is targeted toward how an organization innovates within the company culture, team environments, and individuals. IT organizations at an operational level tend to have a reactive approach to innovation and follow a “that is the way we have always done it” or “if it isn’t broke, don’t fix it” mentality. This laggard mindset can push IT operations into a reactive versus proactive mindset, where automation and innovation are low-priority initiatives.

A lack of organizational innovation in the IT operations departments of corporations can be a drain on the overall business environment. A lack of organizational innovation leads to several challenges in regards to the IT community and, more importantly, driving the business forward. An employee that is not performing optimally due to a lack of motivation in the IT sector has a negative impact on overall organizational innovativeness. As the business proceeds with moving forward with approved business-case initiatives, IT is usually the main enabler of these important revenue generating projects. While the business focuses on where the company should invest and pursue opportunities, the IT department leads the charge in terms of operational efficiencies and driving internal innovation. An

employee productivity drain in IT can become a financial burden in all industries due to the overall prevalence of IT in modern business practices. The importance of an employee performance deficit cannot be overlooked due to the widespread financial impact. The human resources community must provide new tools and methods for management to utilize in combating this problem (Collins & Smith, 2006). The importance of creating high-performing employees in the IT department has overarching significance to the health of the business (Piccoli & Ives, 2005). Specifically, innovation is of the utmost importance within IT to be capable of delivering business-case project work on schedule and within tight budgetary constraints. If the IT operations team does not constantly innovate routine processes and create efficient system methodologies, a lack project progress can stall business initiatives (Bharadwaj, 2000).

I.2 Research Problem and Question

My research objective is to understand the impact of IT operations employees' self-determination and job attitudes on employee performance and organizational innovativeness. The unit of analysis for this study is the individual IT employees within an organization. This research project studied individuals in the IT operations groups at various companies, which included the network administrators and system administrators in IT operations groups within several industries. While the importance of motivation and goal setting has been studied previously in non-IT settings (e.g., Hirst 1988), the focus on lacking job performance in relation to industry-specific IT operations has been limited. The long-standing observation that various factors regarding performance are related (Dermer 1975) was utilized in my evaluation of the implications of defining the drivers of an IT employee's performance. Past researchers have made distinctions regarding the differences between intrinsic motivation and extrinsic motivation and why we are moved to do something (Ryan & Deci, 2000). The research in this article specifically attempts to add to our understanding of the drivers of job performance and organizational innovativeness, relating the drivers directly to IT employee performance in regards to overall business innovation.

In previous research studies, intrinsic motivation has been linked to autonomous motivation (Gagné & Deci, 2005). This study expands on this concept to focus on the relationship between motivated IT employees and overall business improvements regarding employee performance. My research

objective is to attempt to highlight the antecedents of job performance and the subsequent organizational innovativeness outcome in the scope of IT operations. I draw on self-determination theory to investigate the following research question:

How and why does self-determination impact employee performance and innovation in IT operations organizations?

I.3 Theoretical Framework

While exploring the relationships between job performance and organizational innovativeness, I utilized the theory of self-determination to provide a theoretical framework for my study. Self-determination theory explores the relationships between three main components: autonomy, competence, and relatedness. I analyzed each of these components to understand the relationships between job performance and ultimately organizational innovativeness. In this study, I provide a thorough review of the components of self-determination theory and how they can be aligned to job performance and organizational innovativeness. As a compliment to self-determination theory, specific job attitudes also were utilized to provide additional information regarding the effects of intention to stay, job satisfaction, and organizational commitment on job performance and organizational innovativeness.

I.4 Structure and Expected Contribution

The purpose of conducting this study is to understand how the drivers of an employee's job performance in an IT operations group will ultimately lead to organizational innovativeness. The following chapters provide an understanding of the impact of job performance on organizational innovativeness. The study that follows provides an analysis to attempt to answer the research question: *How and why does self-determination impact employee performance and innovation in IT operations organizations?*

Chapter 2: Literature Review. In this chapter, I review previous literature regarding the drivers of employee performance and motivation from a self-determination theory perspective. Subsequent to reviewing prior research discussing drivers of employee performance and the role of

organizational innovativeness, I introduce a theoretical model relating to the research analysis and development of my hypotheses.

Chapter 3: Methodology. The design of the study is reviewed in this chapter to provide the approach taken to answer the research question. This analysis framework is proposed as the basis for my research methods and procedures.

Chapter 4: Data Analysis and Results. In this chapter, I provide information regarding the data collection procedure, sample methods, and results of the data analysis. The data collection, results, and discussion are based on the literature review previously conducted.

Chapter 5: Discussion Findings, Contributions, and Limitations. This chapter provides an overall description of the findings once the data analysis is completed. The contributions and implications to theory and practice are outlined in this section. Finally, the limitations of the study are highlighted to provide a basis for future research.

The study design is augmented by the research study element format created by Mathiassen, Chiasson, and Germonprez (2012) and described in Table 1. Understanding the drivers of job performance and organizational innovativeness will help IT operations organizations better capitalize on human resources and management practices. The problem (P) being addressed is that a lack of organizational innovation leads to several challenges in regards to the IT community and, more importantly, driving the business forward. A demotivated employee in the IT sector has a negative impact on overall organizational innovativeness. The importance of creating job performance in the IT department has overarching significance to the health of the business (Piccoli & Ives, 2005). This research investigates the relationships between employee performance and organizational innovativeness. The area of concern (A) is hypothesizing the adoption of procedures that enhance the components of self-determination theory (competence, autonomy, and relatedness) will drive innovativeness. The framing (F) is that self-determination theory is explored to align the drivers of job performance and organizational innovativeness to understand the relationships between these constructs. The method (M) is a quantitative survey completed by network administrators and system administrators utilizing the Qualtrics survey

application and a data analysis utilizing partial least squares structural equation modeling (PLS-SEM). The research question (RQ) is, "How and why does self-determination impact employee performance and innovation in IT operations organizations?" And lastly, the contribution (C) is lessons for how managers can create innovativeness through nurturing the components of self-determination theory and specific employee job attitudes.

Table 1 Research Study Elements

Component	Specification
P (Problem)	A lack of organizational innovation leads to several challenges regarding the IT community and, more importantly, driving the business forward. A demotivated employee in the IT sector has a negative impact on overall organizational innovativeness. The importance of creating job performance in the IT department has overarching significance to the health of the business (Piccoli & Ives, 2005). This research investigates the relationships between employee performance and organizational innovativeness.
A (Area of Concern)	The adoption of procedures that enhance the components of self-determination theory (competence, autonomy, and relatedness) will drive innovativeness.
F (Framing)	Self-determination theory is explored to align the drivers of job performance and organizational innovativeness to understand the relationships between these constructs.
M (Method)	Quantitative survey completed by network administrators and system administrators utilizing the Qualtrics survey application. Data analysis utilizing partial least squares structural equation modeling (PLS-SEM).
RQ (Research Question)	How and why does self-determination impact employee performance and innovation in IT operations organizations?
C (Contribution)	Lessons for how managers can create innovativeness through nurturing the components of self-determination theory and specific employee job attitudes.

Note. Reprinted from Mathiassen, L., Chiasson, M., & Germonprez, M. (2012). Style composition in action research publication. MIS quarterly, 347-363.

II CHAPTER 2: LITERATURE REVIEW

This chapter examines the literature to understand what previous research has been conducted in the areas of self-determination theory, organizational innovativeness, and motivation. The previous research will be utilized to gain a comprehensive view of the existing body of knowledge, so that my research can build upon past and present information.

II.1 Self-Determination Theory

Self-determination theory provides an explanation of why people are self-motivated to complete certain tasks. Once people obtain basic needs, they evolve to perform at higher levels, are healthier, and have a heightened sense of well-being.

A basic need is defined as one that provides physiological requirements, such as food, water, and air (Hull, 1943). Alternately, basic needs can also be psychological, such as gaining the respect from others or obtaining appreciation and love. Self-determination theory explains that a person must fulfil three fundamental psychological requirements: autonomy, competence, and relatedness. These three needs must be met throughout a person's lifetime to reach an elevated functional state and to experience a state of well-being and personal growth (Deci & Ryan, 2000a; Ryan & Deci, 2000a; Ryan & Frederick, 1997).

The *autonomy* component of self-determination theory is explained as a person feeling as if they are leading their own destiny and are in control of their ultimate outcome. A person that has a high level of autonomy will be confident in knowing they are on the correct path in life and that they have chosen this path. In this theory, *competence* is defined as the need for people to challenge themselves constantly to achieve difficult or challenging tasks. The pursuits of mastery, control, and success provide a high level of competence for these people. The concept of *relatedness* is centered on a feeling of being connected with other people. Once a person feels connected with others, they develop a feeling of having the support of others in social settings. Relatedness is achieved once the person feels well adapted and connected with

others in their social environment. When all three of these needs are met, a person will achieve the foundation to perform optimally throughout their lifetime (Deci & Ryan, 2002).

The three basic needs are universal across the globe, and the importance of these needs varies throughout a person's lifetime. A person's background or culture also influences the importance of what precisely defines basic needs for each individual (Ryan & Deci, 2000b).

A key concept of self-determination theory is that the act of chasing after certain goals in life can have a positive effect on satisfying one's basic needs and, ultimately, can provide self-satisfaction (Ryan et al., 1996). However, the pursuit of other life goals may not satisfy the three basic needs and can lead to a state of ill-being or even ill-health. Previous studies have found that, while focusing on intrinsically motivated endeavors could lead to a sense of well-being, focusing on extrinsically motivated initiatives could lead to heightened levels of anxiety and even depression (Vansteenkiste et al., 2004).

While not the focus of this study, I feel it is relevant to highlight throughout this study that a major theme in the self-determination theory is the distinction between intrinsic motivation and extrinsic motivation. Intrinsically motivated people perform an activity because they experience positive feelings and do so to achieve a sense of satisfaction (White, 1959). Alternatively, extrinsically motivated people complete tasks simply to achieve a reward or to avoid a disciplinary action (Deci & Ryan, 2008).

The focus of this research study draws from the previous concepts self-determination theory has provided. The research project explores the level of job performance and organizational innovativeness when the constructs of self-determination theory and job attitudes are measured.

Currently, there is no systematic literature review available that clarifies the role organizational innovativeness has in the IT sector. This critically apprised topic review led me to a more structured approach toward understanding the value of organizational innovativeness within the IT sector and how this focus on the organizational team members can lead to innovate product development. This review was intended to analyze systematically the academic literature available and summarize the current

knowledge on the subject of organizational innovativeness in the context of IT industries to discover new approaches and questions for further academic research on this topic. Evidence-based management techniques were used to produce the results of the research and to produce a theoretical model that can be utilized to conduct future research on the topic of organizational innovativeness within an IT operations organization.

Candidate Journals

The following scholarly journals were suitable targets for my research pursuits:

1. *Academy of Management Journal*,
2. *Human Resource Management*,
3. *Journal of Applied Psychology*,
4. *MIS Quarterly*, and
5. *Organizational Behavior and Human Decision Processes*.

I focused my attention on these journals because they are a diverse selection of organizational behavior centric journals and other sources of organizational innovativeness related research information that provided suitable outlets for my research efforts. I also selected the listed journals because they are included in the Financial Times top 50 journals, which supplied me with an abundance of high quality scholarly journal resources. My primary focus for utilizing these journals in my research was to obtain scholarly information to back my research objectives and to leverage previous scholarly information in creating my own hypotheses.

Several key scholarly sources were found to aid in my literature review and knowledge gathering regarding IT processes and the innovative practices they provide the business. Much of the previous focus has been on discovering new ways to adopt technology rather than adopt organizational innovative processes and procedures.

In their paper, "Moving beyond Intentions and toward the Theory of Trying: Effects of Work Environment and Gender on Post-Adoption Information Technology Use" (Ahuja and Thatcher 2005), the authors examined two research topics relating to the work environment and employees trying to innovate with IT. The first topic investigated the interactions of IT use and how overload and autonomy influenced the relationship. The second topic investigates the use of IT and the influences gender play on the overload and autonomy. They found that overload and autonomy impact IT adoption. As predicted, overload negatively impacted IT adoption, and autonomy positively impacted IT adoption. The second research question regarding the role of gender on influence of overload and autonomy on IT adoption also was supported, indicating gender does impact the strength of the link between IT adoption and overload and autonomy. In women, overload led to a decrease in trying to innovate with IT, while in men, overload led to an increase in trying to innovate with technology. One theory is that women may have distinct outside stressors, such as primary family-care responsibilities, which lead to a drop in the desire to pursue IT use due to time constraints.

The paper by Hsieh et al. (2011) discusses how firms can obtain value from technologies they have adopted over an extended period. The concept of extended use of an implemented technology is examined once the technology has been implemented for an extended period. The research study investigates how post-adoptive behavior can be enhanced to leverage a technology that has been purchased. This study focuses on individual users as the unit of analysis. The study pulls from sensemaking theory to develop a theoretical model regarding the continued use of an implemented technology in a firm and reveals the benefits and drawbacks of post-adoptive behavior. Sensemaking was examined at two levels: technology and work system. The technology level refers to the ability of the product to perform as expected. The work system level refers to the ability of the product to enhance the customer service employees' (CSE) ability to satisfy customer service requests efficiently. Sensemaking theory is defined as the method people use to justify (make sense of) what they are doing.

Swanson and Ramiller (2004) discussed how organizations could innovate IT. The authors suggest two ways in which firms can innovate with IT: mindful innovation and mindless innovation. Mindfulness utilizes a more thoughtful process that incorporates deep analysis of why an IT solution should be evaluated, implemented, and eventually assimilated into an organizational process. Mindless innovation takes an opposite approach, and IT solutions are brought in as an afterthought to fix, mistakenly, an existing issue or simply to disrupt the current business practices in a sub-performing environment. The authors argue that an organization that embraces IT innovativeness must do so in a thoughtful and systematic method. The organizational culture is a key component to ensure the successful adoption of an IT solution, specifically at the managerial level. Management that blindly implements the latest (fashionable) IT solution without thinking through the end-user acceptance, adoption, and assimilation will fail to implement successfully an otherwise innovative IT solution. This study once again references sensemaking in regards to how organizations evaluate the need for innovative IT solutions.

Schultze and Leidner (2002) argued that knowledge management systems in organizations can have positive and negative consequences for the organization. Previous research focused on the positive aspects of retaining and correctly interpreting knowledge within an organization. This study spoke of negative aspects of knowledge management as a topic of which to be aware and to investigate in future research. One case specifically discussed the impact on the tobacco industry when it was discovered the tobacco companies were aware of the risks associated with tobacco use and did not disclose this information to the public. Organizational efficiencies and processes were highlighted in the article to reveal how knowledge management could be optimized to produce more benefits rather than drawbacks. Innovation diffusion theory, theory of absorptive capacity, and theories of managerial cognition are all referenced in the research study.

The articles apprised, while varied in subject matter, did provide insightful information. Organizational innovation can have a broader scope and definition than previously envisioned. Several

points bubbled to the surface during the critically appraised topic exercise. The central theme of the articles defined not only in what situation IT innovations should be pursued but also by which specific firms utilizing a specific position, such as a mindful innovator. Based on these articles the findings are as follows.

- Innovating with IT should be thought out thoroughly and constantly. Knee-jerk decisions to implement the latest fashionable IT solution routinely have mediocre results, at best.
- Adopting an IT innovation solution tends to mask human resource organizational issues. Technology can negatively enable behaviors that should be addressed in a more human interaction setting.
- While knowledge management practices and data retention are generally considered productive and fruitful for the organization, too much of a good thing can be detrimental.
- Sensemaking plays a key role in what can and should be reviewed prior to committing to a proposed innovative technology. Weick et al. (2005) argued that sensemaking is not about making the one correct decision, but rather an iterative process in which constant learning and understanding take precedence. In the IT innovation realm, sensemaking is the golden rule and should be standardized in the operational decision process.

Organizational innovativeness within an IT organization can have many definitions and points of view. The decision to adopt an IT solution should not be taken lightly due to the potential negative impact these systems can have on organizational effectiveness. Processes and procedures should be evaluated and potentially revised first, and if it makes sense, IT solutions should enhance the operational efficiencies but should not be a reaction to the latest IT fad.

The purpose of conducting this literature synthesis was to identify organizational innovativeness information in previous literature that would aid me in the research regarding motivation and job performance in IT and the business benefits of organizational innovativeness. I specifically looked for

organizational innovativeness within IT operations organizations in relation to employee performance and overall project completion efficiencies. I analyzed several journals on which to focus my research efforts. The journals of focus were Academy of Management Journal, Human Resource Management, Journal of Applied Psychology, MIS Quarterly, and Organizational Behavior and Human Decision Processes. This literature synthesis was an attempt to draw correlations in the literature to aid in a contribution to the existing body of knowledge. In this effort, I gained significant knowledge regarding organizational innovativeness that was applied to my research topic.

My scoping decisions regarding content were to gather articles that not only analyzed organizational innovativeness but also articles that got closer to studying organizational innovativeness in IT and the variables that contribute to an innovative culture. This search resulted in several articles that are more general in nature but provided quality insight into general innovation for the benefit of my overall research study. My scoping decisions regarding time sequence were to order chronologically the articles and then determine how each proceeding section relayed to the following sections of the article. This logical flow was beneficial to understand better the intent of the authors and to act as an aid to form my own conclusions.

While conducting this literature synthesis, I focused on several key concepts to aid in building the overall body of work.

1) How does motivation within the IT industry influence employee performance and contribute to organizational innovativeness?
2) How does self-determination theory impact job performance in relation to motivation?
3) I analyzed work on motivation research and how it can relate to organizational innovativeness in the IT industry.

After reading the available journal articles, I identified several compelling patterns that had emerged. While motivation has been extensively studied in various environments, a gap in the literature

exists, related to the attribution of IT operations efficiencies to job performance and organizational innovativeness. I accumulated a vast array of knowledge regarding how the constructs of self-determination theory and job attitudes can greatly influence an employee's performance. This information prompted me to draw on the literature to form the basis of my analysis and ultimately form the hypotheses in my research study. Another pattern that I extracted from the literature review consisted of the common elements of job performance, regarding a highly motivated employee. The literature suggests that, while extrinsic motivators like monetary rewards can be influential in terms of work performance, intrinsic motivation is a much more powerful source of motivation. Long-term self-satisfaction is also a byproduct of being intrinsically motivated.

Some of the themes I developed by conducting the literature synthesis were as follows:

1) Motivation varies greatly between people regarding orientation (i.e., the type of motivation that a person assimilates). A person can be motivated to accomplish the same goal as another person, such as achieving good grades, but can also be motived by an internal need to learn or, in contrast, a need to please a teacher (Ryan & Deci, 2000).
2) Organizational investment in employees via training and mentoring has a positive effect on worker performance and can strengthen intrinsic motivation as a correlating outcome (Kuvaas & Dysvik, 2009).
3) Self-determination theory, which is derived from the idea that autonomy, among other things, drives motivation more efficiently than intrinsic and extrinsic motivators do alone. This theory has overarching significance for my research and I discovered common themes regarding these concepts (Gagné & Deci, 2005).
4) Additional monetary rewards failed to encourage higher levels of job performance when the employees were performing tasks that were interesting and engaging. Conversely, job performance and motivation can be increased (to a certain extent) when completing mundane tasks by supplying additional monetary rewards (Hirst, 1988). This theory can be applied to

develop job performance strategies in IT, by examining the level of complexity of the tasks assigned to employees and adjusting monetary rewards accordingly.

Literature Synthesis Summary

1) The reviewed articles were useful in correlating the same type of conclusion (that overall job performance and organizational innovativeness within IT are beneficial to the overall organization). Other articles that were reviewed took an indirect approach to describe the benefits. Overall, this literature review proved beneficial to understand the various positions the authors presented, regarding motivation, job performance, and organizational innovativeness.
2) The various theories the authors referenced from previous articles provided helpful insight into how previous research helps build a body of knowledge regarding the impact of organizational innovativeness and the dependencies on motivation and job performance.
3) Having reviewed numerous articles to research and solidify my theoretical model, I determined that the articles used provided a proper literature synthesis regarding how the constructs of self-determination theory, job attitudes, motivation, and job performance provide the building blocks of a successful organizationally innovative outcome. Especially in the area of IT operations groups, the literature provides support for the notion that a firm that can provide organizationally innovative concepts can support an overall successful organization.

Several key concepts utilized in this study are explained in this section to promote a better understanding of the target audience and constructs of my research design.

Network Administrator

A network administrator is an IT professional who manages the way that computers interact with each other. Depending on the size of the organization, a network administrator can also interact with user- and system-level issues. The larger the organization, the greater the number of defined roles that are created to impose a separation of duty between computer connectivity and user-focused troubleshooting. In a smaller organization, network administrators are commonly engaged to troubleshoot system and user-

specific issues. Network administrators commonly monitor the health of the organization's network to proactively troubleshoot computer routing issues and ensure that computers maintain an efficient path among systems. Local area network (LAN) and wide area network (WAN) are architectures that can require a network administrator in a large organization to have different skill sets. In a smaller organization, the network administrator usually has a basic knowledge of the LAN and the WAN environments. In a larger organization, the network administrator tends to focus on either the LAN or the WAN to provide expertise in one of the two areas. Network administrators also typically engage in information security (INFOSEC) responsibilities, including the administration of firewalls and other network-security-related equipment. Again, in a smaller organization, the network administrator typically handles all aspects of the network, including network-related INFOSEC responsibilities.

System Administrator

A system administrator is an IT professional who manages the way that computer systems, such as the operating system (OS), are configured and maintained. Depending on the size of the organization, a system administrator can also perform network-related tasks. A system administrator typically ensures that the organization's computer systems are built to certain specifications to align with the resources required by the applications being run on the systems. System administrators are also responsible for monitoring system resources to ensure that applications are running efficiently and to determine whether such resources as central processing units (CPU) or readily accessible memory (RAM) need to be upgraded to handle additional resource utilization.

Organizational Innovativeness

Amabile (1988) explained organizational innovation by noting that "Innovation is built on the creative ideas as the basic elements. Organizational innovation is the successful implementation of creative ideas within an organization." The key to innovation includes the implementation of innovative ideas, and not simply the process of creating new ideas. Given that having creative ideas consists simply of the development of new and unique thoughts, organizational innovativeness harnesses these creative ideas and implements them in an organization. This innovation may lead to new products, streamlined

operational processes, or cost-saving initiatives yielded by innovative ideas. Although most research is focused on methods to generate creativity, organizational innovativeness is a more targeted field of research. Van de Ven (1986) explains innovation, in an individual and an organization, as follows: "innovation is . . . the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order" (p. 590). In a research study, Kanter (1983) described innovation in similar terms: "the process of bringing any new problem-solving idea into use . . . Innovation is the generation, acceptance and implementation of new ideas, processes, products, or services." Ruvio et al. (2014) provided a theoretical model of organizational innovativeness. This model has been adapted for this study, regarding the overall interpretation and structure of organizational innovativeness (see Figure 1).

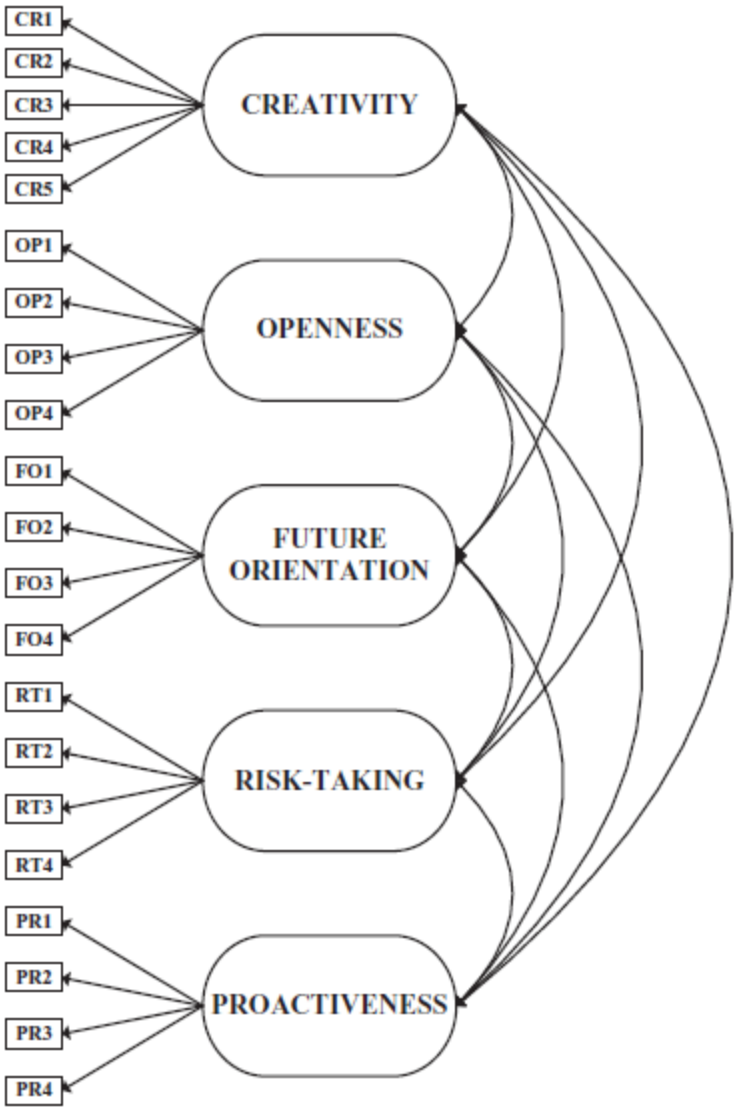

Figure 1 Theoretical model of OI by Ruvio et al. (2014).

II.2 Research Model and Hypotheses

The aim of this research is to provide information regarding the relationships between the constructs of self-determination theory, job attitudes, and job performance, as antecedents to organizational innovativeness. The aim of this study is to determine job performance and organizational innovativeness among network administrators and system administrators within an IT operations organization. The goal of this study is to answer the following research question: *How and why does self-determination impact employee performance and innovation in IT operations organizations?*

The research model focuses on several dimensions of performance, motivation, and organizational innovativeness. The constructs of self-determination theory (autonomy, competence, and relatedness) are independent variables, hypothesized to impact job performance. The constructs of job attitudes (intention to stay, job satisfaction, and organizational commitment) are also independent variables, hypothesized to impact job performance. Job performance is hypothesized to be a mediator among the constructs of self-determination theory, job attitudes, and organizational innovativeness. Job performance is hypothesized to be a predictor of organizational innovativeness. Motivation is considered a moderator of the constructs of self-determination theory and job attitudes and job performance (See Figure 2).

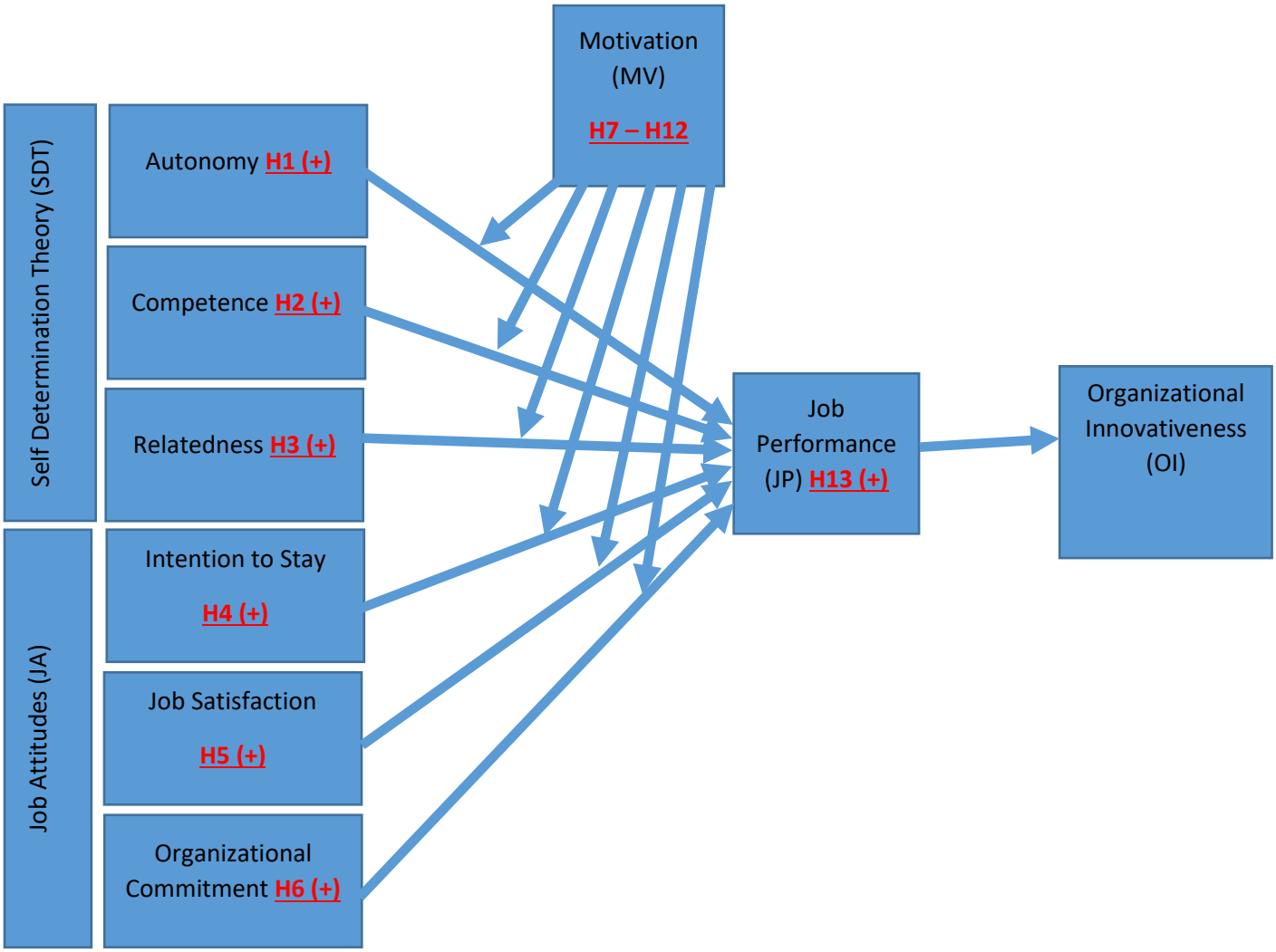

Figure 2 Research Model

Self-Determination Theory

Autonomy

H1: Perceived autonomy has a positive effect on perceived individual performance.

Self-determination theory describes a person as autonomous when the person's actions are viewed as willingly engaged and when the person fully supports the endeavors that they are carrying out (Chirkov et al., 2003). Therefore, a person is highly autonomous if they act in accordance with their true desires, integrated values, or interests (Deci & Ryan, 1985, 2000; Ryan, 1995). Self-determination theory provides additional information, defining autonomy as the scope of actions that an individual stands behind completely, endorses, or fully accepts (Deci & Ryan, 1985, 2000). Previous research has demonstrated that increases or decreases in the amount of autonomy have been utilized to differentiate between varying levels of motivation. Increases in positive outcomes are shown to be related to an increasing amount of autonomy (Ryan & Connell, 1989). Previous research has also provided evidence supporting a positive relationship between overall well-being and autonomy. In a situation in which a person feels autonomous, competent, and related, that person has a feeling of well-being (Ryan & Deci, 2000; Pelletier, Levesque, & Legault, 2002; Roth et al., 2007). There is evidence to suggest that increasing the level of autonomy in the work environment produces several positive outcomes that have been observed. Such increased autonomy has resulted decreased absenteeism, increased employee job satisfaction, a sense of physical and psychological well-being, more organizational trust, as well as increased self-actualization and self-esteem (Blais & Briére, 1992; Koestner, Bernieri, & Zuckerman, 1992; Ryan & Deci, 2000; Williams & Deci, 1996).

Competence

H2: Perceived competence has a positive effect on perceived individual performance.

In previous research, competence has been defined to indicate an employee's level of job knowledge, skills, and attitudes (Tao et al., 2006). Competence has also been defined as a group of related characteristics, such as job knowledge, attitudes, and skills (Winterton et al., 2006). Competence

has been recognized as the outcome of KSA (knowledge, skills, and attitudes; Hunt & Meech, 1991). In this study, competence can be divided into two main components: hard skills, which are linked to technical knowledge (Boyatzis, 2008; Rainsbury et al., 2002; Villiers, 2010), and soft skills, which refer to people skills utilized in the daily work environment (Spencer & Spencer, 2008). Previous research by Jayan (2006), Zampetakis and Moustakis (2010), and Horton (2009) established competence as a crucial element in determining the level of job performance in the public sector. Organizations that are experiencing growth and innovation in response to rapid transformation in their business environment must develop knowledge, skills, and abilities within their workforce (Alsabbah & Ibrahim, 2016). Truitt (2011) argued that the disparity that exists between the actual skills that employees have and the skills needed to perform certain tasks may lead to job dissatisfaction. Organizations lacking competence in the workforce are at a disadvantage when competing with their rivals. Rowden and Ahmad (2000) explained that highly skilled and competent employees are better equipped to achieve customer satisfaction and task accomplishments as employees. Yng Ling (2003) differentiated job performance, which is related to proficiency and skills in job-specific tasks, from competence. Previous research has proven empirically that employees' performance relies on the organizations' training practices (Guest, 2002; Huselid, 1995) and employee competence (Jayan, 2006).

Relatedness

H3: Perceived relatedness has a positive effect on perceived individual performance.

Relatedness is defined as the feeling of being taken care of in non-dependent ways, as well as the inverse, which is the desire to take care of other people. In other words, the feeling of relatedness revolves around how people interact with, are interested in, and provide energy to other people. People who display relatedness tendencies also convey this feeling to others in a non-contingent manner (Ryan & Deci, 2000, 2001). A feeling of relatedness may be encountered at various social levels, ranging from one-on-one relationships to larger group settings. Previous research embedded in self-determination theory has revealed that having a strong sense of relatedness may lead to various positive outcomes. For example, Baard, Deci, and Ryan (2004) discovered that besides competence and autonomy, relatedness,

specifically, is a predictor of employees receiving increased performance review ratings. Regarding sporting activities, higher levels of relatedness were a predictor of playing fairly and enhanced social conduct (Rutten, 2011). One longitudinal research project found that students who related positively with their teachers had higher levels of participating in class, increased academic success, and elevated satisfaction at school (King, 2015; Tian et al, 2014).

Job Attitudes

Intention to Stay

H4: Perceived intention to stay has a positive effect on perceived individual performance.

Intention to stay is defined as an employee's likelihood and willingness to stay in an organization by developing a positive outlook or attitude. Retaining an organization's top talent and encouraging work behaviors that are positive can both be considered effects of wanting to stay at a company.

Reyes explained intention to stay as employees striving to remain members of the organization or their willingness to stay in the organization (Reyes, 1990). Intention to stay has been further described as an employee's desire to remain with an organization after cautious consideration of the alternatives (Tett & Meyer, 1993). A desire to work with colleagues has also been defined as the intention of employees to stay with a firm (Price et al, 2001). Coetzee and Stoltz (2015) described another view of intention to stay, as having a loyalty to the environment and work conditions within the organization, in addition to the desire to continue to work for their organization and with their colleagues (Coetzee & Stoltz, 2015).

Job Satisfaction

H5: Perceived job satisfaction has a positive effect on perceived individual performance.

Spector (1994) argued that job satisfaction can be explained as the varying degrees to which people are satisfied or dissatisfied with their current employment situation. The idea that job satisfaction can enhance psychological well-being in the workplace has influenced the definition of job satisfaction (Robbins et al., 2003). The definition of job satisfaction has been explained as the feeling of pleasure employees obtain by completing the work they have been assigned to do. Job satisfaction has also been explained by describing an emotional state of pleasure shortly after receiving a job performance review or

appraisal (Shaikh et al., 2012). Other authors have argued that job satisfaction is expressed by employees when they relate a positive emotional state at work, such as a desired outcome, with actual outcomes (Cranny et al., 1992). Previous research has varied greatly in defining what job satisfaction actually is (Fritzsche & Parrish, 2005). One definition describes the positive or negative feelings of employee, in relation to their employment (Smith et al., 1969).

The term job satisfaction has also been explained as "a function of the perceived relationship between what one wants from one's job and what one perceives it as offering" (Locke, 1969). The degree and the amount of negative or positive feelings an employee has toward a job can also influence the level of job satisfaction (Locke, 1976; Odom et al., 1990).

Organizational Commitment

H6: Perceived organizational commitment has a positive effect on perceived individual performance.

Organizational commitment is defined as the strong association that an employee has to the organization they work for. When this commitment bond is strong, employees have high levels of motivation and enthusiasm for the organization. The level of commitment to the organization and the level of commitment to individual job responsibilities have strong ties to the belief that the organization is producing positive results in society. A work attitude is viewed as the level of commitment to an organization and its goals; the higher the level of commitment to the organization, the stronger a bond is formed between the employee and achieving organizational goals (Langton & Robbins, 2007). Someone who is devoted to an organization tends to have higher levels of organizational commitment. Reyes (1990) asserted that organizational commitment is comprised of having the drive to constantly improve the effectiveness and performance of the company, maintaining faith in organizational goals, relating with the organizational values, and having a sense of belonging within the company. Shreya and Rajib (2014) argued organizational commitment is based on the level of support from the company and if the support drops, so does the level of employee organizational commitment.

Motivation

H7: Motivation moderates the impact of autonomy on perceived individual performance.
H8: Motivation moderates the impact of competence on perceived individual performance.

H9: Motivation moderates the impact of relatedness on perceived individual performance.
H10: Motivation moderates the impact of intention to stay on perceived individual performance.
H11: Motivation moderates the impact of job satisfaction on perceived individual performance.
H12: Motivation moderates the impact of organizational commitment on perceived individual performance.

Motivation is roughly explained as the persistence, direction, and energy of a person's actions (Pinder, 1998). As evidence of the variety of approaches to conceptualize and measure motivation, it is an inherently complex concept. While at work, employees put effort into their jobs not only to receive income for their efforts but also as a way to satisfy their fundamental psychological requirements (Fernet, Gagné, & Austin, 2010). Motivation has also been described as the formation of a person's efforts and energies into actions (Khalid, 2017). The extent to which a worker performs behavioral activities that are driven by their own desires is the degree of the worker's motivation. Perry and Porter (1982) argued that not only is the force of the motivation important in understanding the degree of motivation, but also important are the quality and direction of the motivation. A key element related to the level of motivating is that highly motivated employees must apply this energy toward organizational goals to be impactful. Simply being motivated can neglect the organizational benefits if not properly directed to these organizational goals. Porter and Miles (1974) provided evidence that motivation within employees can be measured and forecasted by four unique variables: external environment characteristics, job characteristics, individual characteristics, and work environment.

Job Performance

H13: Perceived job performance has a positive effect on perceived organizational innovativeness.

Job performance is explained as the voluntary behavior and actions of employees within an organization to aid and support the goals of the company (Murphy, 1989). Job performance efforts are recognized and rewarded by utilizing an authorized system of benefits and are also listed as a description of the job (Williams & Anderson, 1991). Previous studies within organizational and industrial psychology have validated job performance as a vital indicator regarding organizational success, which has been related to an organization's longevity, increased productivity, and higher earnings (Johnson, 2003; Motowildo, Borman, & Schmit, 1997). Job performance, representing an integral component of

organizational growth, has inspired researchers to investigate a multitude of antecedents that may impact job performance, including personality (Thoresen et al, 2004), capability (Deadrick, Bennett, & Russell, 1997), and a supervisor's managerial or leadership technique (Piccolo & Colquitt, 2006).

III CHAPTER 3: METHOD

III.1 Research Design

The research model used in this study is a variance model. The fundamental question of why motivation influences performance was the basis for utilizing a variance model to complete the research. Another point to highlight is a variance model was chosen due to the causal relationship between the constructs of self-determination theory, job performance, and organizational innovativeness outcomes. Variance models have been compared and contrasted to process models in previous literature (Burton-Jones, McLean, & Monod, 2011). My research reveals that the outcome-driven approach a variance model provides is a key component in my epistemological assumptions. The attributes analyzed in this research were viewed as the independent variables, which lead to the dependent variables. Figure 3 (Bacharach, 1989) displays the criteria for evaluating the validity of a variance study. This figure provides evidence that, while theory building is composed of concepts, constructs, and variables, these independent variables lead to dependent variables through the use of proposition and hypothesis. Boundary conditions and assumptions were excluded from the theoretical model so they would not interfere in the research approach outcome. Although other researchers have argued that a process model and a variance model can be utilized together successfully in the same research study (Sabherwal & Robey, 1995), I chose not to rely on this approach, as a "what" design model of the constructs of self-determination theory, job performance, and organizational innovativeness was the goal and not a "how" design.

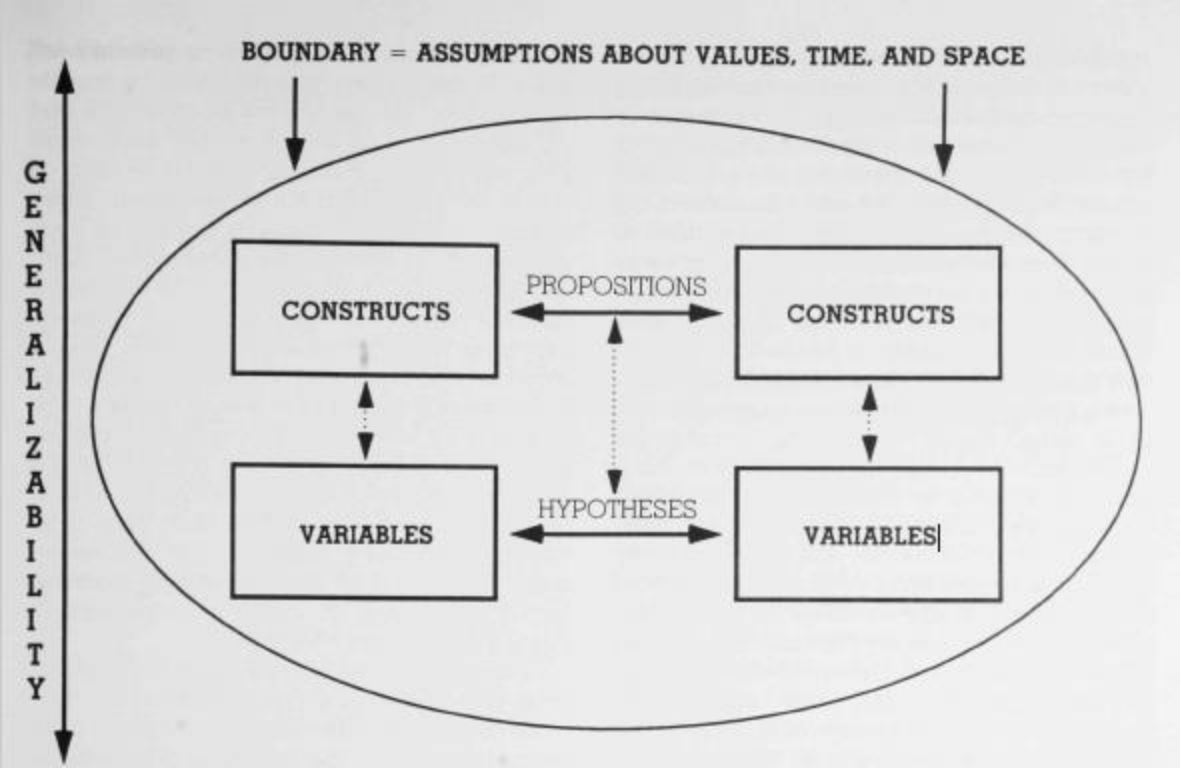

Figure 3 (Bacharch, 1989)

Form of Engaged Scholarship

The engaged scholarship approach utilized for my research was the design and evaluation research method (Van de Ven, 2007). I evaluated the current policies and procedures used in a corporate organization to gauge organizational innovativeness among the IT operations workforce. I also evaluated the effectiveness of the current human resources tools to determine whether motivation issues are being effectively identified and addressed in the business community. My goal was to understand the policies and procedures that are successful, as well as those that are failing, in the field of organizational innovativeness within IT operations, and then to propose solutions to expand the current knowledge in this field of research. My research efforts included quantitative research methods to analyze my research data.

Key Elements of the Variance Model

The key elements (independent variables) of the variance model (**Figure 2**) in this study were as follows:

1. Autonomy as an antecedent to job performance
2. Competence as an antecedent to job performance
3. Relatedness as an antecedent to job performance
4. Intention to stay as an antecedent to job performance
5. Job satisfaction as an antecedent to job performance
6. Organizational commitment as an antecedent to job performance
7. Motivation as a moderator of both the self-determination and job attitudes constructs in relation to job performance
8. Job performance as an antecedent to organizational innovativeness

These key elements were utilized in this study to provide evidence that the dependent variable (organizational innovativeness) is clearly an outcome of job performance in the form of the independent variables utilized in this study. The constructs in this study are defined as follows:

- Motivation - This is the level to which an employee is driven to perform a task or make an individual contribution that contributes to the vision of the group, department, or organization.
- Job Performance - This is the level at which an employee performs their job. Some examples include infrastructure stability, information security and on time project completion rate.
- Organizational Innovativeness – The level at which an employee innovates, utilizing products or procedures to cultivate efficient and novel methods to complete a task with their team members.
- Self-determination theory constructs (autonomy, competence, and relatedness) – The level of autonomy, competence, and relatedness achieved, as measured by self-determination theory.
- Job attitudes constructs (intention to stay, job satisfaction, and organizational commitment) - The level of intention to stay, job satisfaction, and organizational commitment achieved, as measured by job attitudes.

Several threats to validity were recognized in this research study:

1. Internal validity: The independent variables were examined to validate that no relationship between them exists in the absence of any treatment of variation.
2. Statistical validity: The results were validated as not occurring by chance.

3. Construct validity: The findings were generalized to the theory in the study. The dependent variables of job performance and organizational innovativeness were tested to ensure the consequence or outcome is true if the antecedent independent variables are true.
4. External validity: The findings were generalized to the larger population of IT organizations and not just from the findings in the individual test cases.

III.2 Data Collection, Instrument, and Variables

Participants were recruited from a pool of Qualtrics survey participants. The Qualtrics survey platform allows researchers to construct surveys utilizing their Internet portal. The survey can then be published to pre-screened candidates from the Qualtrics pool of qualified resources. The Qualtrics platform can be utilized to complete basic analysis and export the survey results to other advanced analysis platforms, such as SPSS or SmartPLS. The Qualtrics online survey tool was used as both a recruiting tool and a survey distribution tool (see Appendix C). The Qualtrics service provides access to a qualified pool of interviewees and includes a method for validating respondents. The Qualtrics participant screening service reduced concerns regarding potentially bad data, such as automatic computer-generated responses. Participants were allowed to proceed with the questionnaire based on initial qualifying questions, which included: “Are you agreeing to participate in completing this survey exercise?”; “What is your current age?”; “What geographic region are you permanently located in?”; “Are you a Network Administrator?”; “Are you a System Administrator?”; “How many years of experience do you have as a Network Administrator?”; “How many years of experience do you have as a System Administrator?”. If the respondent answered “No” to any of these qualifying question, the survey was halted, and the results were not recorded. The qualifying questions are utilized to pre-screen participants that may not be qualified candidates, and may provide questionable data as results.

The survey questionnaire consisted of 94 questions and was developed utilizing Qualtrics. The survey questions utilized a 7-point Likert scale format, consisting of the following response options: “Strongly disagree”; “Disagree”; “Somewhat disagree”; “Neither agree nor disagree”; “Somewhat agree”; “Agree”; “Strongly agree”. The overall data collection strategy proceeded as follows: Respondents were

first identified from a random pool of Qualtrics candidates. The survey instrument was tested prior to implementation, using a small sample (n = 30) of respondents with similar experiences to those of the final participants. Once initial testing was complete, the final survey was administered using Qualtrics among a single batch of 300 participants. The duration of the survey was estimated to be 19.3 minutes and had to be completed in one sitting. A disclaimer indicating the estimated time to take the survey was posted prior to the participants starting the survey. The survey was administered online, with both web and mobile access options.

Data were analyzed using IBM SPSS* version 25 for quantitative analysis, at 95 percent confidence level. Additionally, the data were analyzed using Smart PLS3. The data collection procedures produced usable data from 330 participants. Demographic data were solicited in the survey.

Autonomy

Participants were asked their views on autonomy with a seven-item measure of autonomy adapted from Koopmans et al. (2014). The seven items are as follows: "I feel like I can make a lot of input to deciding how my job gets done"; "I feel pressured at work"; "I am free to express my ideas and opinions on the job"; "When I am at work, I have to do what I am told"; "My feelings are taken into consideration at work"; "I feel like I can pretty much be myself at work"; and "There is not much opportunity for me to decide for myself how to go about my work." A composite score was developed to form a variable called autonomy.

Competence

Participants were asked their views on competence with a six-item measure of competence adapted from Koopmans et al. (2014). The six items are as follows: "I do not feel very competent when I am at work"; "People at work tell me I am good at what I do"; "I have been able to learn interesting new skills on my job"; "Most days I feel a sense of accomplishment from working"; "On my job I do not get much of a chance to show how capable I am"; and "When I am working I often do not feel very capable." A composite score was developed to form a variable called competence.

Relatedness

Participants were asked their views on relatedness with an eight-item measure of relatedness adapted from Koopmans et al. (2014). The eight items are as follows: "I really like the people I work with"; "I get along with people at work"; "I pretty much keep to myself when I am at work"; "I consider the people I work with to be my friends"; "People at work care about me"; "There are not many people at work that I am close to"; "The people I work with do not seem to like me much"; and "People at work are pretty friendly towards me." A composite score was developed to form a variable called relatedness.

Job Satisfaction

Participants were asked their views on job satisfaction with a four-item measure of job satisfaction developed by Blau (1987) and Susskind et al. (2000). The four items are as follows: "Overall, I am pleased with my work"; "Overall, I am satisfied in my current practice"; "My work in this practice has met my expectations"; and "My current work situation is not a major source of frustration in my life." A composite score was developed to form a variable called job satisfaction.

Organizational Commitment

Participants were asked their views on organizational commitment with a five-item measure of organizational commitment developed by Bartol (1979), and Mathieu and Zajac (1990). The five items are as follows: "I would accept almost any type of job assignment in order to keep working for this organization"; "I feel very little loyalty to this organization"; "I am proud to tell others that I am part of this organization"; "I talk up this organization to my friends as a great organization to work for"; and "It would take very little chance in my present circumstances to cause me to leave." A composite score was developed to form a variable called organizational commitment.

Intention to Stay

Participants were asked their views on intention to stay with a four-item measure of intention to stay developed by Markowitz (2012). The four items are as follows: "I plan to leave this organization as soon as possible"; "Under no circumstances will I voluntarily leave this organization before I retire"; "I

would be reluctant to leave this organization"; and "I plan to stay at this organization as long as possible." A composite was developed to form a variable called intention to stay.

Motivation

Participants were asked their views on motivation with a six-item measure of motivation developed by SurveyMonkey (https://www.surveymonkey.com/mp/employee-motivation-survey-template/). The six items are as follows: "When at work, I am completely focused on my job duties"; "I am determined to give my best effort at work each day"; "I am often so involved in my work that the day goes by very quickly"; "I am excited about going to work"; and "I feel completely involved in my work"; "I am inspired to meet my goals at work." A composite score was developed to form a variable called motivation.

Job Performance

Participants were asked their views on job performance with a 17-item measure of job performance developed by Koopmans et al. (2014). The seventeen items are as follows: (Task performance scale) "I managed to plan my work so that it was done on time"; "My planning was optimal"; "I kept in mind the results that I had to achieve in my work"; "I was able to separate main issues from side issues at work"; "I knew how to set the right priorities"; "I was able to perform my work well with minimal time and effort"; "Collaboration with others was very productive"; (Contextual performance scale) "I took on extra responsibilities"; "I started new tasks myself, when my old ones were finished"; "I took on challenging work tasks, when available"; "I worked at keeping my job knowledge up-to-date"; "I worked at keeping my job skills up-to-date."; "I came up with creative solutions to new problems"; "I kept looking for new challenges in my job"; "I did more than was expected of me"; "I actively participated in work meetings"; and "I actively looked for ways to improve my performance at work." A composite score was developed to form a variable called job performance.

Organizational Innovativeness

Participants were asked their views on organizational innovativeness by completing a 27-item measure of organizational innovativeness that Shoham et al. (2012) developed. The 27 items include the following divided into categories. We have ***general***: "Our organization often implements fresh ideas"; "Our organization seeks new ways in which to implement work"; "Our organization is creative in its working methods"; "Our organization is generally the first in the market with new products and services"; "Innovation is accepted as a risk in our organization, and the organization is resistant to it"; and "Our new products and services introduced to the market have increased over the past five years." We have ***creativity***: "Creativity is encouraged here"; "Managers here expect us to be resourceful problem-solvers"; "We are constantly looking to develop and offer new or improved services"; "Our ability to function creatively is respected by the leadership"; and "We are encouraged to use original approaches when dealing with problems in the workplace." We have ***openness to change*****:** "(This organization) is always moving toward the development of new answers"; "Assistance in developing new ideas is readily available"; "(This organization) is open and responsive to changes"; and "People here are always searching for fresh, new ways of looking at problems." We have ***future orientation*****:** "(This organization) establishes a realistic set of future goals for itself"; "(This organization) effectively ensures that all managers and employees share the same vision of the future"; "(This organization) conveys a clear sense of future direction to employees"; and "(This organization) has a realistic vision of the future for all departments and employees." We have ***risk-taking*****:** "(This organization) believes that higher risks are worth taking for high payoffs"; "(This organization) encourages innovative strategies, knowing well that some will fail"; "(This organization) likes to take big risks"; and "(This organization) does not like to 'play it safe.'" Finally, we have ***proactiveness***: "We are constantly seeking new opportunities for the organization"; "We take the initiative in an effort to shape the environment to our advantage"; "We are often the first to introduce new services"; and "We usually take the initiative by introducing new

administrative techniques." A composite score was developed to form a variable called organizational innovativeness.

III.3 Method Analysis

To evaluate the relationship between the constructs of self-determination theory and job performance, I used PLS-SEM's coefficient of determination (R^2 value) as the statistical analysis method. Hypotheses 1 – 3 used the coefficient of determination to determine the quantity of variance in the endogenous latent construct (job performance) explained by all of the exogenous latent constructs (autonomy, competence, and relatedness) linked to it. The reason for using the coefficient of determination is to understand how much the changes in the constructs of self-determination predict the change in job performance.

As with the constructs of self-determination theory, the constructs of job attitudes (job satisfaction, organizational commitment, and intention to stay) also used a PLS-SEM coefficient of determination (R^2 value) as the statistical analysis method. Hypotheses 4 – 6 used the same method as the approach used with the self-determination theory constructs. The goal was to use PLS-SEM's coefficient of determination to define the quantity of variance in the endogenous latent construct (job performance) explained by all of the exogenous latent constructs (job satisfaction, organizational commitment, and intention to stay) linked to it.

To test hypotheses 7 – 9 (motivation moderates the relationship between the constructs of self-determination theory and job performance), I used PLS-SEM's two-stage moderation analysis. The two-stage approach provided the results of the interaction term of the third variable, which is the moderator (motivation), as well as its effect on the strength and direction of the relationship between the constructs of self-determination theory and the level of job performance.

To test hypotheses 10 – 12 (motivation moderates the relationship between the constructs of job attitudes and job performance), where the higher the motivation level, the stronger the relationship, I again used PLS-SEM's two-stage moderation analysis to understand the interaction term of the third

variable, the moderator (motivation), and its effect on the direction of the relationship of the constructs of job attitudes and the level of job performance.

As a final test for hypothesis 13, the coefficient of determination (R^2 value) was again used as the statistical analysis method to determine the level of variance present in the endogenous construct (organizational innovativeness) explained by the exogenous construct (job performance) attached to it in the path model.

IV CHAPTER 4: DATA ANALYSIS AND RESULTS

IV.1 Data Analysis Sequence

The data analysis sequence that I used consisted of three steps. The first step was to develop descriptive statistics regarding the data collected. During this phase of the analysis, tests for normally distributed data were investigated. Tests for skewness and kurtosis were conducted. The data set was found not to be normally distributed, which is common in the social sciences. In an effort to describe the data further, gender, age, ethnic group, years of experience, and education levels were analyzed from the survey responses. Because the data set was not normally distributed and the goal of the research was to predict variance within the proposed theoretical model, partial least squares (PLS) was selected as the principal analysis technique. PLS-SEM is an appropriate method to use when estimating complex cause-effect relationship models with latent variables. PLS uses a measurement model and a structural model in the analysis. Smart PLS 3.0 was used to analyze the overall research model, including the measurement and structural models.

The second step of the data analysis was to analyze the measurement model. The path model consisted of both formative and reflective construct measurements. The reflective constructs were measured for internal consistency reliability, which included composite reliability and Cronbach's alpha analysis. The reflective constructs were then tested for convergent validity, which included validating the outer loadings and average variance extracted (AVE) information. The formative measurement models were analyzed for collinearity issues and were assessed for significance and relevance among the formative indicators relating to the construct with which they were associated.

The third step of the path model analysis focused on the structural model link between the constructs of self-determination theory (autonomy, relatedness, and competence) and job performance. Also, the link between job attitudes (job satisfaction, organizational commitment, and intention to stay) and job performance was analyzed. The link between job performance and organizational innovativeness

was also analyzed. The structural analysis included testing for collinearity, significance and relevance, the coefficient of determination, effect size, model fit, mediation, and moderation.

IV.2 Descriptive Statistics

IV.2.1 Target Sample Size

Using the 10-times rule, which is often cited (Barclay, Higgins, & Thompson, 1995), I validated that my sample size was correct for my specific analysis. The 10-times rule states that the size of the sample should be equal to or larger than one of the following:

1) 10 times the largest number of formative indicators used to measure a single construct, or
2) 10 times the largest number of structural paths directed at a particular construct in the structural model.

The construct labeled job performance (PERF) has 17 formative indicators. The construct also has the highest number of structural paths directed at it, which is seven. Focusing on the larger requirement in the model with 17 formative indicators, the minimum sample size should be 170 (17 formative indicators * 10 = minimum sample size of 170). The sample size used in this study is 330, so the minimum requirement has been met.

IV.2.2 Survey Demographics

Demographic information was gathered regarding the following: sex (male or female), ethnic group (country of origin), and highest education level achieved. The overall demographics, which are presented in Table 2, represent the cross-section of categories.

Table 2 Sample Descriptions

Variable	n	Percentage of Sample
Sex		
Male	301	91.2
Female	29	8.8
Total	330	100
Ethnic Group Membership		
African American	10	3.0
Asian	6	1.8
Caucasian	288	87.3
Hispanic	14	4.2
Native American	5	1.5
Other	7	2.1
Total	330	100
Highest Education Level Achieved		
Part High School	0	0.0
High School Graduate	3	0.9
Part College/ Technical School	10	3.0
College Graduate	70	21.2
Master's Degree	208	63.0
Advanced College Degree Beyond Masters	39	11.8
Total	330	100

Male and female respondents were distributed at 91.2% and 8.8%, respectively. Having a higher level of men in IT is common, so this representation was expected for my sample size.

Table 3 Demographics (Gender)

Sex (circle one)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	301	91.2	91.2	91.2
	Female	29	8.8	8.8	100.0
	Total	330	100.0	100.0	

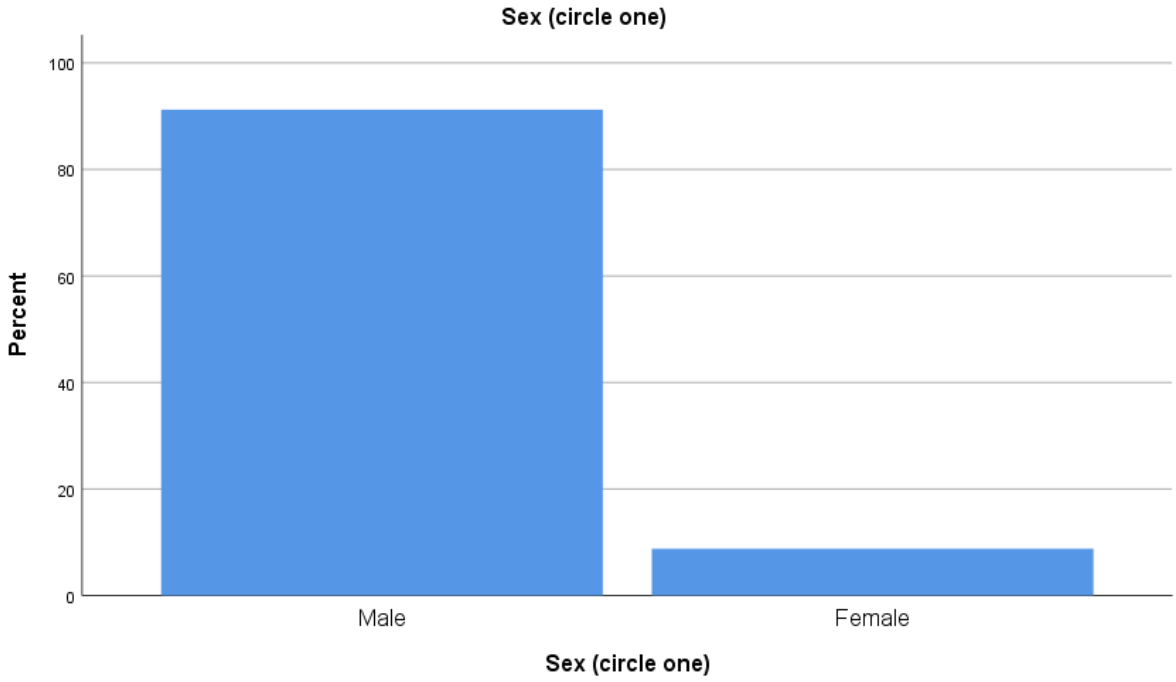

Figure 4 Demographics (Gender)

Regarding current age, more than 68% of the respondents were between 35 – 44 years old, 15.5% of the respondents were 45 – 54, and 11.5% were 25 – 34. See Table 4 for a demographic age summary.

Table 4 Demographics (Age)

What is your current age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 24	3	.9	.9	.9
	25 - 34	38	11.5	11.5	12.4
	35 - 44	226	68.5	68.5	80.9
	45 - 54	51	15.5	15.5	96.4
	55 - 64	11	3.3	3.3	99.7
	65 - 74	1	.3	.3	100.0
	Total	330	100.0	100.0	

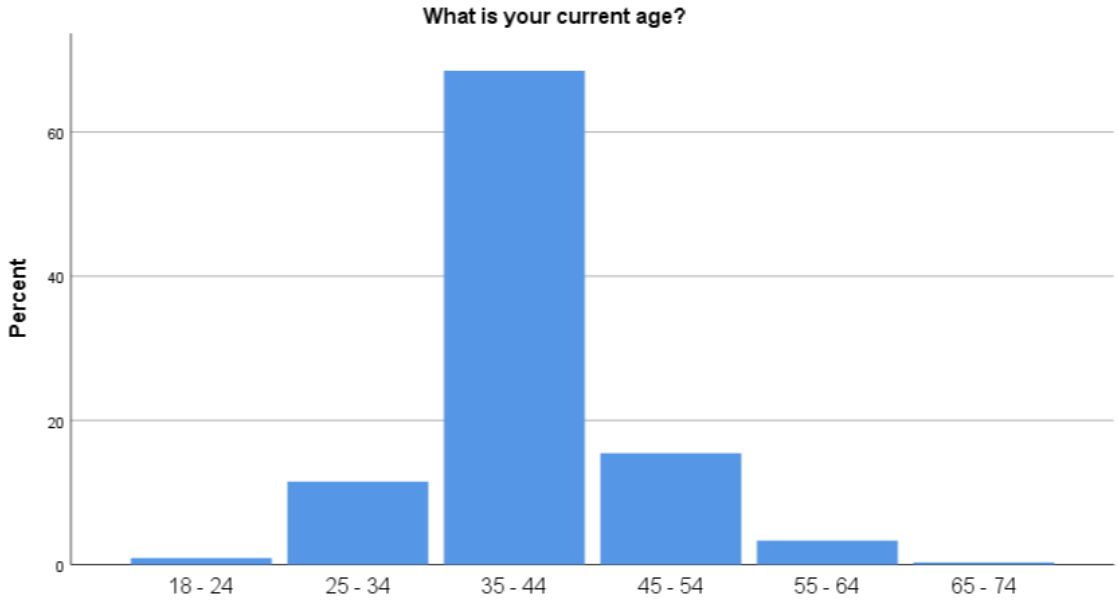

Figure 5 Demographics (Age)

Regarding ethnic background, Caucasians made up the majority of the sample at 87.3%, followed by Hispanics and African Americans at 4.2% and 3%, respectively.

Table 5 Demographics (Ethnic Group)

Ethnic group membership (circle one):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African-American	10	3.0	3.0	3.0
	Asian	6	1.8	1.8	4.8
	Caucasian	288	87.3	87.3	92.1
	Hispanic	14	4.2	4.2	96.4
	Native American	5	1.5	1.5	97.9
	Other	7	2.1	2.1	100.0
	Total	330	100.0	100.0	

Years of experience was evaluated for both the network administrators and the system administrators to ensure a good cross-section of experience was captured from the participants. Of the respondents who were network administrators, most of the experience in years was in the following categories: 6 – 10 at 37%, 1 – 5 at 17.1%, and 11 – 15 at 16.7%.

Table 6 Demographics (Years of Experience – Network Administrator)

How many years of experience do you have as a Network Administrator?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 -1	1	.3	.4	.4
	1 - 5	44	13.3	17.1	17.5
	6 - 10	95	28.8	37.0	54.5
	11 -15	43	13.0	16.7	71.2
	16 -20	24	7.3	9.3	80.5
	21 - 25	11	3.3	4.3	84.8
	26 -30	7	2.1	2.7	87.5
	31 - 35	5	1.5	1.9	89.5
	36 - 40	4	1.2	1.6	91.1
	41 - 50	6	1.8	2.3	93.4
	50 or more	17	5.2	6.6	100.0
	Total	257	77.9	100.0	
Missing	System	73	22.1		
Total		330	100.0		

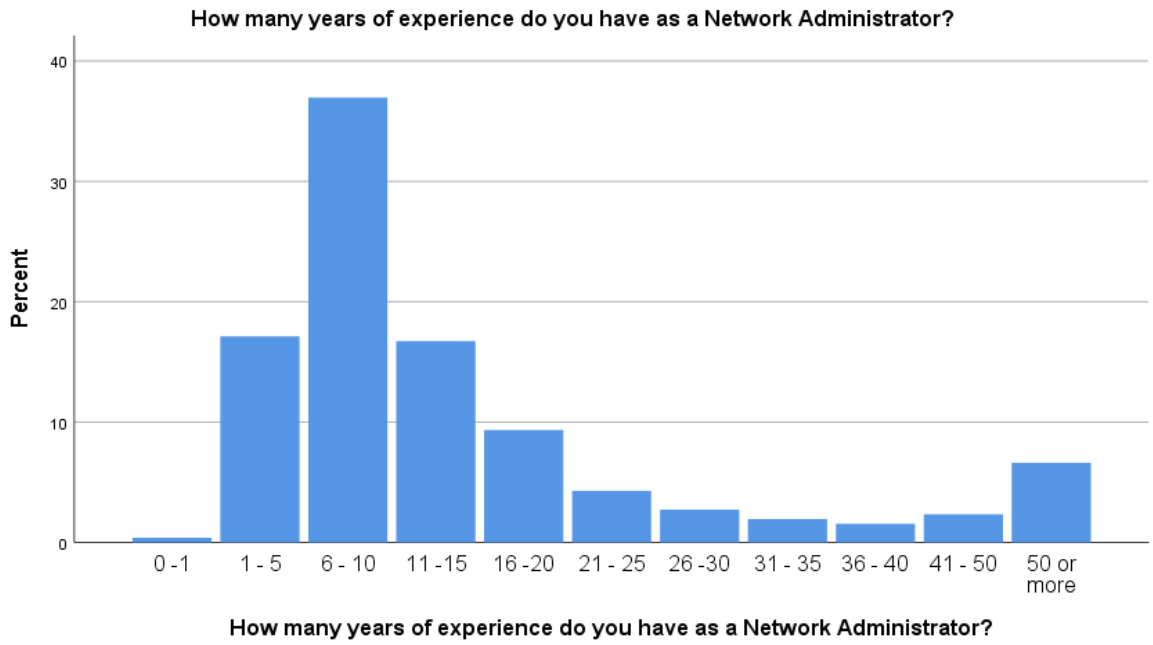

Figure 6 Demographics (Years of Experience – Network Administrator)

Of the respondents who were system administrators, the largest percentage of experience in years was 6 – 10 at 35.6%, 1 – 5 at 24.6%, and 11 – 15 at 11.7%.

Table 7 Demographics (Years of experience – System Administrator)

How many years of experience do you have as a System Administrator?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 -1	3	.9	1.0	1.0
	1 - 5	76	23.0	24.6	25.6
	6 - 10	110	33.3	35.6	61.2
	11 -15	36	10.9	11.7	72.8
	16 -20	30	9.1	9.7	82.5
	21 - 25	11	3.3	3.6	86.1
	26 -30	9	2.7	2.9	89.0
	31 - 35	3	.9	1.0	90.0
	36 - 40	3	.9	1.0	90.9
	41 - 50	13	3.9	4.2	95.1
	50 or more	15	4.5	4.9	100.0
	Total	309	93.6	100.0	
Missing	System	21	6.4		
Total		330	100.0		

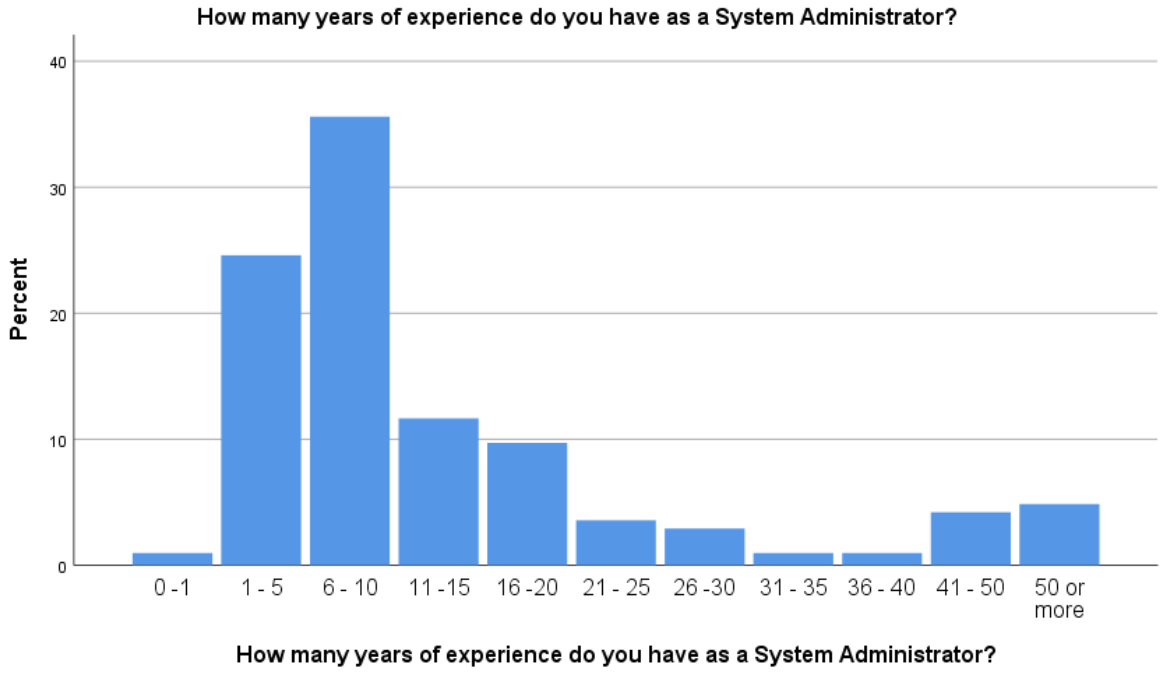

Figure 7 Demographics (Years of Experience – System Administrator)

Ninety-nine percent of respondents had some college exposure, and some had earned advanced degrees.

The highest education level achieved was represented by the following categories: less than 1% had only a high school education, 3% had partial college or technical school experience, 21% were college graduates, 63% had master's degrees, and 11.8% had advanced degrees beyond a master's degree. Table 8 represents the highest education level achieved.

Table 8 Highest Education Level Achieved

Highest Education Achieved (circle one):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School Graduate	3	.9	.9	.9
	Part College/Technical School	10	3.0	3.0	3.9
	College Graduate	70	21.2	21.2	25.2
	Master's Degree	208	63.0	63.0	88.2
	Advanced College Degree beyond Masters	39	11.8	11.8	100.0
	Total	330	100.0	100.0	

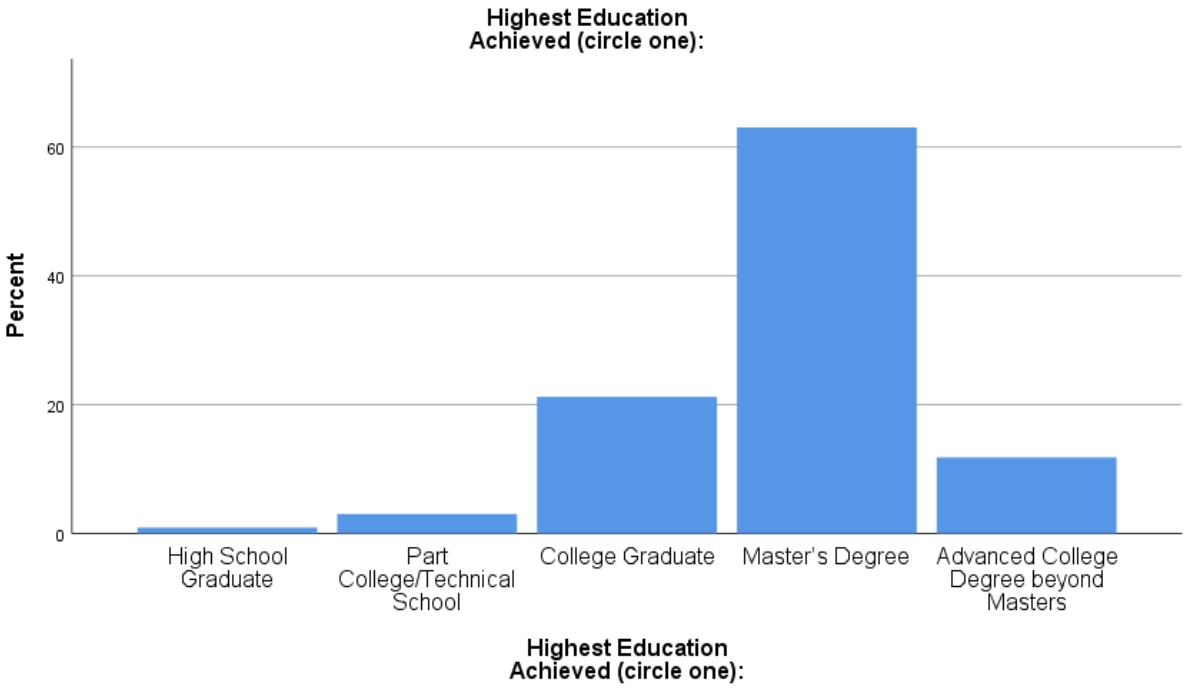

Figure 8 Highest Education Level Achieved

IV.3 PLS-SEM Path Model Data Analysis

The following section describes the quantitative method for analyzing the data. The second-generation data analysis method of PLS-SEM was chosen as a good candidate for analyzing the data.

PLS-SEM path model data analysis was used to provide a robust exploratory research method for this study examining the various constructs and indicators from a construct path relationship methodology. Path models use a measurement model (or inner model) and a structural model (or outer model) to analyze the proposed theory. Both measurement theory and structural theory were used to access the overall path model. The analysis includes both the measurement (outer) and structural (inner) models used in the study. The path model has both reflective and formative indicators, so each construct in the measurement model is evaluated appropriately.

• Measurement (Outer) Model Analysis

1. Investigate the Existence of Internal Consistency Reliability in the Reflective Measurement Model:

A. Composite Reliability

B. Cronbach's Alpha

2 Investigate the Existence of Convergent Validity in the Reflective Measurement Model:

A. Outer Loadings

B. AVE

C. Investigate the Existence of Collinearity Issues in the Formative Measurement Models

D. Investigate the Formative Indicators' Significance and Relevance

3. Structural (Inner) Model Analysis

A. Investigate the Existence of Collinearity Issues in the Structural Model

B. Investigate the Structural Model Relationships for Significance and Relevance (Total Effects)

C. Investigate the R^2 Values

D. Investigate the f^2 Effect Size

E. Investigate the Effects of Mediation

F. Investigate the Effects of Moderation

IV.3.1 Analyze the Reflective Measurement Models

The evaluation of reflective measurement models begins by creating a model to include both exogenous latent variables and endogenous latent variables. Once the variables are in place, both the reflective and formative in indicators are assigned to the appropriate latent variables. Finally, the latent variables are connected to indicate the direction of the interaction. The PLS algorithm is initiated per the recommended settings (Hair, 2014).

Figure 9 displays the PLS-SEM model created in SmartPLS 3 (2015), which includes the constructs and indicators. This model is used in the analysis going forward.

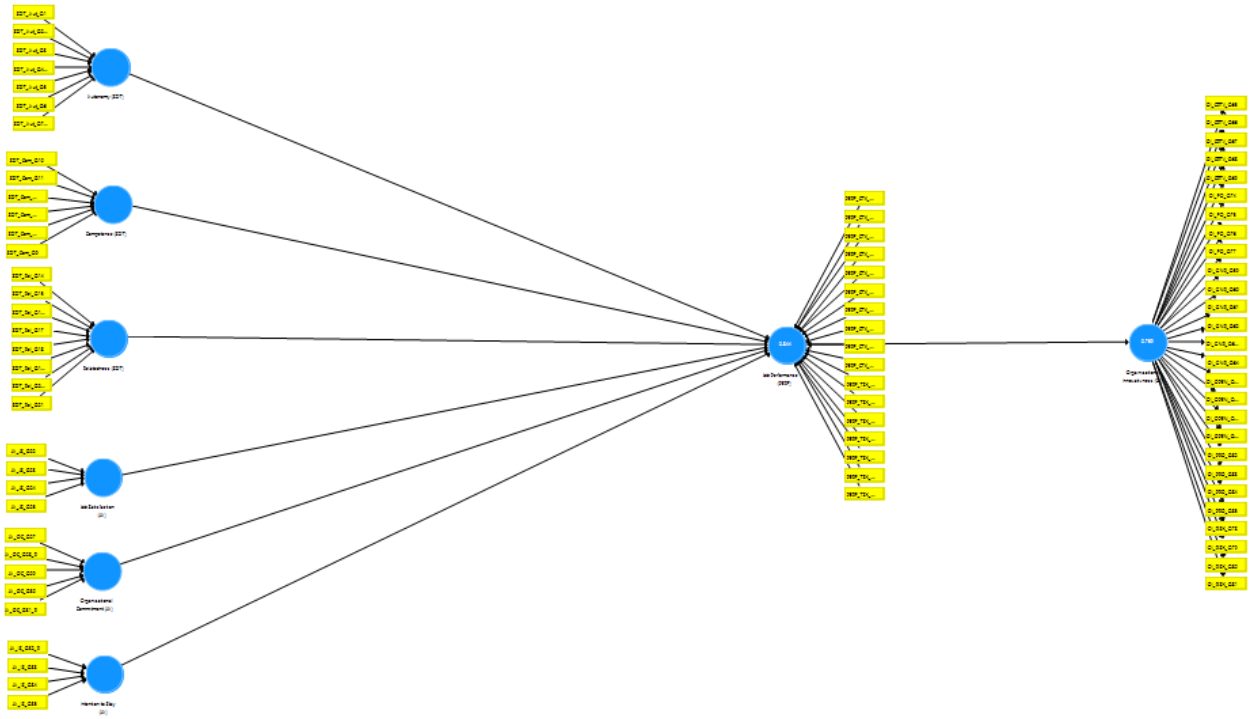

Figure 9 Indicators and Constructs Included in the Model

IV.3.1.1 Evaluate the Measurement Model for Internal Consistency Reliability

The reflective measurement model assessment begins with evaluating the reflective indicators present in the organizational innovativeness (OI) construct. The assessment starts with analyzing the

internal consistency reliability. Composite reliability is inspected to analyze the outer loading metrics of the OI construct indicator variables. Cronbach's alpha is also inspected to validate that it meets the minimum threshold values. "When analyzing and assessing the measures' internal consistency reliability, the true reliability usually lies between Cronbach's alpha (representing the lower bound) and the composite reliability (representing the upper bound)" (Hair, 2014). Both composite reliability and Cronbach's alpha meet the minimum recommend threshold (>0.70). Tables 9 and 10 show a summary of the results.

Table 9 Reflective Construct (Organizational Innovativeness) Composite Reliability

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Organizational Innovativeness (OI)	0.968	0.968	0.004	222.763	0

Table 10 Reflective Construct (Organizational Innovativeness) Cronbach's Alpha

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Organizational Innovativeness (OI)	0.961	0.961	0.005	198.06	0

IV.3.1.2 Evaluate the Measurement Model for Convergent Validity

Next, I proceed with evaluating the measurement model for convergent validity. The focus in measuring the reflective constructs convergent validity is to review the indicators' outer loadings and the AVE (Hair, 2014). The outer loading size, which is also referred to as the indicator reliability, is inspected. The PLS algorithm is completed to begin the analysis. According to Hulland (1999), social science researchers often obtain outer loadings that are considered to be weak (<0.07). The weak outer loadings usually occur when the scales used in these studies are recently developed. Prior to removing indicators that have outer loadings below the 0.70 threshold, researchers should carefully evaluate the impact on the content validity and composite reliability of the construct (Hair, 2014).

During the evaluation of the outer loadings, the decision is made to retain the reflective indicators with low outer loadings (<0.70) based on the fact that: 1) the removal of the two lowest loading indicators (OI_GNR_Q63_R and OI_RISK_Q81) did not result in an increase in composite reliability or the AVE, and 2) the indicators were adapted from the scales used in validated previous research. Table 11 shows a summary of the results.

Table 11 Reflective Construct (Organizational Innovativeness) Outer Loadings

	Organizational Innovativeness (OI)
OI_CRTV_Q65	0.87
OI_CRTV_Q66	0.854
OI_CRTV_Q67	0.754
OI_CRTV_Q68	0.78
OI_CRTV_Q69	0.74
OI_FO_Q74	0.87
OI_FO_Q75	0.737
OI_FO_Q76	0.67
OI_FO_Q77	0.76
OI_GNR_Q59	0.831
OI_GNR_Q60	0.808
OI_GNR_Q61	0.727
OI_GNR_Q62	0.74
OI_GNR_Q63_R	-0.522
OI_GNR_Q64	0.83
OI_OPEN_Q70	0.81
OI_OPEN_Q71	0.812
OI_OPEN_Q72	0.68
OI_OPEN_Q73	0.661
OI_PRO_Q82	0.813
OI_PRO_Q83	0.709
OI_PRO_Q84	0.713
OI_PRO_Q85	0.739
OI_RISK_Q78	0.722
OI_RISK_Q79	0.65
OI_RISK_Q80	0.553
OI_RISK_Q81	0.398

The AVE provides convergent validity at the construct level. The AVE is the grand mean or pooled mean value of the squared loadings associated with the indicators related to the construct. An AVE minimum value of 0.50 provides evidence that the construct describes at a minimum 50% of the variance of its related indicators. Table 12 shows a summary of the results.

Table 12 Reflective Construct (Organizational Innovativeness) Average Variance Extracted (AVE)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Organizational Innovativeness (OI)	0.547	0.546	0.035	15.458	0

IV.3.2 Analyze the Formative Measurement Models

I begin the formative measurement model analysis by assessing the formative measurement models for collinearity issues. The formative indicators provide a contribution to the construct by forming an index that represents the meaning of the construct. Hair (2014) provided two situations in which a researcher should carefully examine if an indicator should be a part of the formative index. The first example explains that the information that a formative indicator provides may be duplicated if the indicator has a high correlation with the other formative indicators belonging to the same variable.

The suspect formative indicators in question should have their collinearity evaluated in this scenario. The second situation involves a formative indicator that has the potential not to add value at a significant level to the latent variable from both an absolute and a relative perspective. This situation can be assessed by analyzing the relevance of the indicators and their significance (Hair, 2014).

The measurement models were analyzed by completing the following procedures:

1. Investigate the Existence of Collinearity Issues in the Formative Measurement Models

2. Investigate the Formative Indicators' Significance and Relevance (Hair, 2014)

IV.3.2.1 Evaluate the Formative Measurement Model for Collinearity Issues

I continued my formative measurement model evaluation by investigating the existence of collinearity issues in the measurement models. A key distinction between formative and reflective indicators is the level of correlation expected in each instance. Formative indicators should not have high correlations due to the nature of each indicator providing unique value to the construct. Conversely, reflective indicators are virtually interchangeable by design (Hair et al., 2016).

I analyzed the variance inflation factor (VIF) to measure collinearity. The VIF value is explained as the severity level of the collinearity among the formative indicators in the measurement model (Hair, 2014). In relation to the VIF, tolerance is defined as a level of variance for one of the formative indictors that other formative indicators in the path model cannot explain (Hair, 2014). High VIF values (>5) should be regarded as potentially problematic, and collinearity should be investigated further (Hair et al., 2011) (Hair, 2014). If the VIF value is discovered to be high (>5), which represents a problem with collinearity among the formative indicators, the removal of one of the indicators should be considered (Hair, 2014).

Table 13 provides a summary of the indicators' outer VIF values. Per this output, I validated that all formative indicators are below the threshold (<5). This provides evidence that no collinearity issues exists within the formative indicator measurement model.

Table 13 Indicators Outer VIF Values

Indicator	Outer VIF Values	VIF Value < 5.0 Criteria
JA_IS_Q32_R	1.534	Yes
JA_IS_Q33	2.186	Yes
JA_IS_Q34	2.015	Yes
JA_IS_Q35	1.163	Yes
JA_JS_Q22	2.3	Yes
JA_JS_Q23	2.03	Yes
JA_JS_Q24	2.111	Yes
JA_JS_Q25	1.118	Yes
JA_OC_Q27	1.619	Yes

JA_OC_Q28_R	1.634	Yes
JA_OC_Q29	1.703	Yes
JA_OC_Q30	1.681	Yes
JA_OC_Q31_R	1.551	Yes
OI_CRTV_Q65	4.182	Yes
OI_CRTV_Q66	3.417	Yes
OI_CRTV_Q67	2.44	Yes
OI_CRTV_Q68	3.323	Yes
OI_CRTV_Q69	2.796	Yes
OI_FO_Q74	4.178	Yes
OI_FO_Q75	2.775	Yes
OI_FO_Q76	2.697	Yes
OI_FO_Q77	2.718	Yes
OI_GNR_Q59	3.522	Yes
OI_GNR_Q60	3.572	Yes
OI_GNR_Q61	2.457	Yes
OI_GNR_Q62	3.096	Yes
OI_GNR_Q63_R	1.807	Yes
OI_GNR_Q64	4.143	Yes
OI_OPEN_Q70	3.684	Yes
OI_OPEN_Q71	3.115	Yes
OI_OPEN_Q72	2.327	Yes
OI_OPEN_Q73	2.129	Yes
OI_PRO_Q82	3.344	Yes
OI_PRO_Q83	2.581	Yes
OI_PRO_Q84	2.562	Yes
OI_PRO_Q85	3.75	Yes
OI_RISK_Q78	2.827	Yes
OI_RISK_Q79	2.503	Yes
OI_RISK_Q80	2.517	Yes
OI_RISK_Q81	1.437	Yes
PERF_CTX_Q49	1.985	Yes
PERF_CTX_Q50	2.538	Yes
PERF_CTX_Q51	2.312	Yes
PERF_CTX_Q52	2.408	Yes
PERF_CTX_Q53	2.295	Yes
PERF_CTX_Q54	2.231	Yes
PERF_CTX_Q55	2.473	Yes
PERF_CTX_Q56	2.139	Yes
PERF_CTX_Q57	2.67	Yes
PERF_CTX_Q58	2.186	Yes
PERF_TSK_Q42	2.652	Yes
PERF_TSK_Q43	1.845	Yes
PERF_TSK_Q44	2.229	Yes
PERF_TSK_Q45	1.487	Yes
PERF_TSK_Q46	2.35	Yes
PERF_TSK_Q47	1.996	Yes
PERF_TSK_Q48	2.281	Yes
SDT_Aut_Q1	1.686	Yes
SDT_Aut_Q2_R	1.804	Yes
SDT_Aut_Q3	1.835	Yes

SDT_Aut_Q4_R	1.637	Yes
SDT_Aut_Q5	2.169	Yes
SDT_Aut_Q6	1.896	Yes
SDT_Aut_Q7_R	1.632	Yes
SDT_Com_Q10	1.623	Yes
SDT_Com_Q11	1.699	Yes
SDT_Com_Q12_R	2.455	Yes
SDT_Com_Q13_R	2.558	Yes
SDT_Com_Q8_R	2.186	Yes
SDT_Com_Q9	1.789	Yes
SDT_Rel_Q14	2.035	Yes
SDT_Rel_Q15	1.44	Yes
SDT_Rel_Q16_R	1.827	Yes
SDT_Rel_Q17	2.086	Yes
SDT_Rel_Q18	1.976	Yes
SDT_Rel_Q19_R	2.413	Yes
SDT_Rel_Q20_R	2.878	Yes
SDT_Rel_Q21	1.893	Yes

IV.3.2.2 Evaluate the Significance and Relevance of the Formative Indicators

The formative indicators' outer weights are examined to access indicator significance and relevance in the measurement model. Multiple regression is used to calculate the outer weight, which consists of both the latent construct scores representing the dependent latent constructs, as well as the formative indicators representing the independent latent constructs (Hair, 2014).

The formative indicators are examined for both their contributions and importance to forming the latent variable. The outer weight values are standardized so they can be accessed with other outer weights without calculation errors. The outer weights represent each unique formative indicator's contribution to the latent variable, or in other words, its relative importance to shaping the latent variable (Hair, 2014).

I completed the bootstrapping procedure to validate that the formative measurement model outer weights have a significantly (<.05) different value from 0 (Hair, 2014).

To analyze the model, a bootstrap analysis is executed per the recommendations (Hair, 2014).

- Subsamples: 5000

- Enable: Do Parallel Processing
- Amount of Results: Complete Bootstrapping
- Confidence Interval Method: Bias-Corrected and Accelerated (BCa) Bootstrap
- Test Type: Two Tailed
- Significance Level: 0.05

Figure 10 provides the model after the bootstrap procedure has been executed.

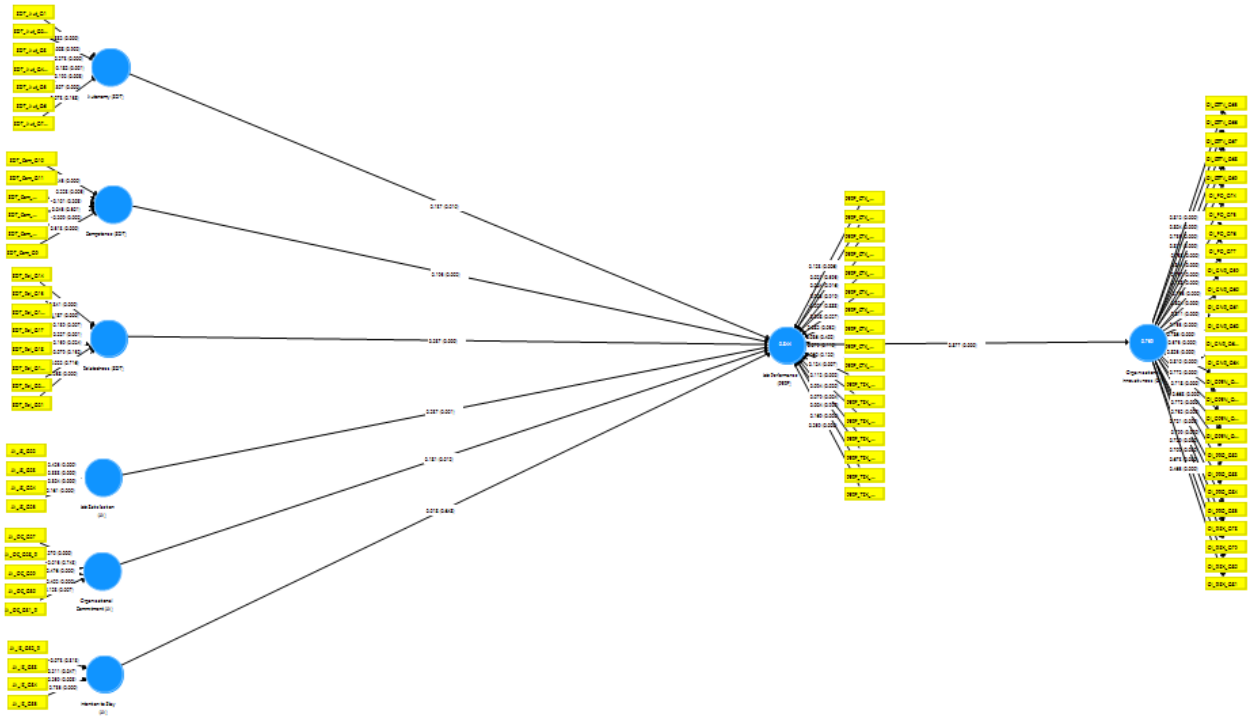

Figure 10 Bootstrapped Model

Table 14 provides summarized information regarding the results. The summarized information identifies eight indicators that should be investigated for elimination because their outer weights are found to be insignificant (p values are greater than 0.05). They also report low outer loadings (outer loading below 0.50).

Table 14 Formative Indicators' Outer Weights

Indicator	Outer Weight	T Statistics	P Values	Outer Weight Significant	Outer Loading	High Outer Loading (>0.5)	Outer Loading Significant (<.05)
JA_IS_Q32_R -> Intention to Stay (JA)	-0.077	1.015	0.31	No	-0.41	No	Yes
JA_OC_Q28_R -> Organizational Commitment (JA)	-0.018	0.404	0.686	No	-0.339	No	Yes
SDT_Aut_Q7_R -> Autonomy (SDT)	-0.073	1.406	0.16	No	-0.359	No	Yes
SDT_Com_Q12_R -> Competence (SDT)	-0.108	1.389	0.165	No	-0.305	No	Yes
SDT_Com_Q13_R -> Competence (SDT)	0.054	0.791	0.429	No	-0.319	No	Yes
SDT_Rel_Q19_R -> Relatedness (SDT)	-0.081	1.414	0.157	No	-0.324	No	Yes
SDT_Rel_Q20_R -> Relatedness (SDT)	0.025	0.413	0.68	No	-0.346	No	Yes
SDT_Aut_Q2_R -> Autonomy (SDT)	0.002	0.03	0.976	No	-0.349	No	Yes

After the bootstrapping procedure, all of the indicators provide evidence of significant outer weights or high outer loading values except for the eight indicators displayed in the output included in Table 14. The output displays the specific indicators that do not meet the criteria of either having a significant outer weight or a high outer loading (>.50), or both. Much debate surrounds the decision to delete an indicator from the model. Having a large number of formative indicators associated with a construct can present an issue regarding the indicators' significance and relevance. When a large number of formative indicators are utilized to represent an individual construct, the chance of one or more indicators having low or a non-significant weight becomes likely (Hair, 2014). During the analysis of formative indicators' significance and relevance, the decision to eliminate an indicator should be thought out thoroughly. If a formative indicator has a non-significant outer weight, it should not immediately be perceived as impacting the quality of the measurement model. The researcher analyzing the measurement model should evaluate the formative indicators' absolute contribution, or in other words, their absolute importance to the construct. The formative indicator in question should be evaluated regarding the

information that the indicator provides independent of the other indicators related to the construct (Hair, 2014).

After careful consideration, the eight indicators displayed did not have significant outer weights or high outer loading values. Thus, they are interpreted as not having absolute contributions or absolute importance to the construct. The focus of this research was on exploratory research rather than on theory confirmation research. I decided to delete the indicators in question and continue with the analysis.

In summary, the formative indicators removed included the following: 1) JA_IS_Q32_R removed from intention to stay (JA), 2) JA_OC_Q28_R removed from organizational commitment (JA), 3) SDT_Aut_Q7_R removed from autonomy (SDT), 4) SDT_Com_Q12_R removed from competence (SDT), 5) SDT_Com_Q13_R removed from competence (SDT), 6) SDT_Rel_Q19_R removed from relatedness (SDT), 7) SDT_Rel_Q20_R removed from relatedness (SDT), and 8) SDT_Aut_Q2_R removed from autonomy (SDT).

The significance and relevance of the formative indicators have been validated by running the bootstrap analysis again to ensure that the remaining indicators meet the minimum requirements.

Table 15 provides summarized information from the analysis. The indicators that are insignificant have been removed from the model.

Below are the indicators with the largest weights in each variable in Table 15:

- **Intention to Stay (JA)** is JA_IS_Q35 (0.738): “I plan to stay at this organization as long as possible.”
- **Job Satisfaction (JA)** is JA_JS_Q22 (0.425): “Overall I am pleased with my work.”
- **Organizational Commitment (JA)** is JA_OC_Q29 (0.491): “I am proud to tell others that I am a part of this organization.”
- **Job Performance (PERF)** is PERF_TSK_Q43 (0.123): “My planning was optimal.”

- **Autonomy (SDT)** is SDT_Aut_Q1 (0.326): "I feel like I can make a lot of inputs to decide how my job gets done."
- **Competence (SDT)** is SDT_Com_Q9 (0.494): "People at work tell me I am good at what I do."
- **Relatedness (SDT)** is SDT_Rel_Q14 (0.329): "I really like the people I work with."

Table 15 Summary of Outer Weights without Formative Indicators (Insignificant)

	Outer Weight	T Statistics	P Values	Outer Weight Significant	Outer Loading	High Outer Loading (>0.5)	Outer Loading Significant (<.05)
JA_IS_Q33 -> Intention to Stay (JA)	0.224	2.238	0.025	Yes	0.679	Yes	Yes
JA_IS_Q34 -> Intention to Stay (JA)	0.284	3.249	0.001	Yes	0.649	Yes	Yes
JA_IS_Q35 -> Intention to Stay (JA)	0.738	10.797	0	Yes	0.899	Yes	Yes
JA_JS_Q22 -> Job Satisfaction (JA)	0.425	7.716	0	Yes	0.9	Yes	Yes
JA_JS_Q23 -> Job Satisfaction (JA)	0.33	6.266	0	Yes	0.851	Yes	Yes
JA_JS_Q24 -> Job Satisfaction (JA)	0.307	5.126	0	Yes	0.853	Yes	Yes
JA_JS_Q25 -> Job Satisfaction (JA)	0.162	3.576	0	Yes	0.46	No	Yes
JA_OC_Q27 -> Organizational Commitment (JA)	0.263	5.319	0	Yes	0.717	Yes	Yes
JA_OC_Q29 -> Organizational Commitment (JA)	0.491	9.921	0	Yes	0.875	Yes	Yes
JA_OC_Q30 -> Organizational Commitment (JA)	0.392	7.229	0	Yes	0.836	Yes	Yes
JA_OC_Q31_R -> Organizational Commitment (JA)	-0.133	3.111	0.002	Yes	-0.4	No	Yes
PERF_CTX_Q49 -> Job Performance (PERF)	0.121	2.817	0.005	Yes	0.729	Yes	Yes
PERF_CTX_Q50 -> Job Performance (PERF)	0.011	0.293	0.769	No	0.749	Yes	Yes
PERF_CTX_Q51 -> Job Performance (PERF)	0.011	0.28	0.78	No	0.716	Yes	Yes
PERF_CTX_Q52 -> Job Performance (PERF)	0.017	0.356	0.722	No	0.696	Yes	Yes
PERF_CTX_Q53 -> Job Performance (PERF)	0.026	0.629	0.529	No	0.703	Yes	Yes
PERF_CTX_Q54 -> Job Performance (PERF)	0.095	2.256	0.024	Yes	0.703	Yes	Yes

PERF_CTX_Q55 -> Job Performance (PERF)	0.1	2.594	0.01	Yes	0.739	Yes	Yes
PERF_CTX_Q56 -> Job Performance (PERF)	0.037	0.924	0.355	No	0.685	Yes	Yes
PERF_CTX_Q57 -> Job Performance (PERF)	0.08	1.751	0.08	No	0.761	Yes	Yes
PERF_CTX_Q58 -> Job Performance (PERF)	0.074	1.981	0.048	Yes	0.735	Yes	Yes
PERF_TSK_Q42 -> Job Performance (PERF)	0.1	2.246	0.025	Yes	0.798	Yes	Yes
PERF_TSK_Q43 -> Job Performance (PERF)	0.123	3.633	0	Yes	0.696	Yes	Yes
PERF_TSK_Q44 -> Job Performance (PERF)	0.096	2.55	0.011	Yes	0.721	Yes	Yes
PERF_TSK_Q45 -> Job Performance (PERF)	0.059	2.425	0.015	Yes	0.575	Yes	Yes
PERF_TSK_Q46 -> Job Performance (PERF)	0.009	0.236	0.813	No	0.737	Yes	Yes
PERF_TSK_Q47 -> Job Performance (PERF)	0.155	3.84	0	Yes	0.75	Yes	Yes
PERF_TSK_Q48 -> Job Performance (PERF)	0.236	4.891	0	Yes	0.821	Yes	Yes
SDT_Aut_Q1 -> Autonomy (SDT)	0.326	4.292	**0**	Yes	0.794	Yes	Yes
SDT_Aut_Q3 -> Autonomy (SDT)	0.276	3.704	**0**	Yes	0.775	Yes	Yes
SDT_Aut_Q4_R -> Autonomy (SDT)	-0.214	3.901	**0**	Yes	-0.608	No	Yes
SDT_Aut_Q5 -> Autonomy (SDT)	0.203	3.291	**0.001**	Yes	0.781	Yes	Yes
SDT_Aut_Q6 -> Autonomy (SDT)	0.302	4.745	**0**	Yes	0.789	Yes	Yes
SDT_Com_Q10 -> Competence (SDT)	0.353	5.072	0	Yes	0.798	Yes	Yes
SDT_Com_Q11 -> Competence (SDT)	0.231	3.081	0.002	Yes	0.758	Yes	Yes
SDT_Com_Q8_R -> Competence (SDT)	-0.247	5.332	0	Yes	-0.449	No	Yes
SDT_Com_Q9 -> Competence (SDT)	0.494	7.855	0	Yes	0.873	Yes	Yes
SDT_Rel_Q14 -> Relatedness (SDT)	0.329	5.165	0	Yes	0.85	Yes	Yes
SDT_Rel_Q15 -> Relatedness (SDT)	0.196	4.495	0	Yes	0.622	Yes	Yes
SDT_Rel_Q16_R -> Relatedness (SDT)	-0.173	3.612	0	Yes	-0.475	No	Yes
SDT_Rel_Q17 -> Relatedness (SDT)	0.213	3.052	0.002	Yes	0.814	Yes	Yes

SDT_Rel_Q18 -> Relatedness (SDT)	0.17	2.472	0.013	Yes	0.778	Yes	Yes
SDT_Rel_Q21 -> Relatedness (SDT)	0.26 7	5.158	0	Yes	0.788	Yes	Yes

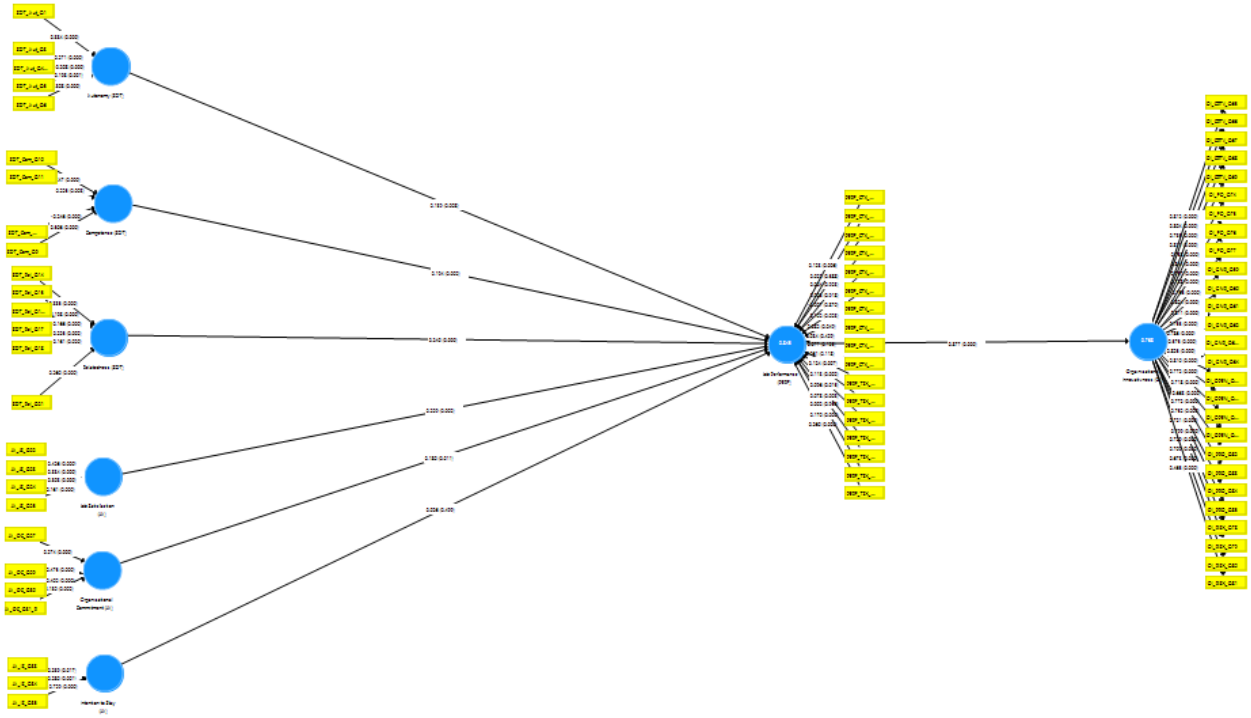

Figure 11 Bootstrapped Model (Insignificant Indicators Removed)

IV.3.3 Analyze the Structural Model

The next stage of the analysis involved the evaluation of the structural (inner) model. The relationships between the constructs and the model's predictive capabilities were the focus of this portion of the analysis (Hair, 2014).

The procedure used in analyzing the structural model included the following six steps (Hair, 2014):

1. Investigate the existence of collinearity issues within the structural model.

2. Investigate the structural model relationships for significance and relevance (total effects).

3. Investigate the R^2 values.

4. Investigate the f^2 effect size.

5. Analyze the predictive relevance Q^2.

5. Investigate the effects of mediation.

6. Investigate the effects of moderation.

IV.3.3.1 Evaluate the Structural Model for Collinearity Issues

Collinearity issues within the structural model were investigated first. Collinearity is investigated because the path coefficients may be biased if the model is determined to have high amounts of collinearity among the exogenous latent variables (Hair, 2014).

In accessing collinearity within the structural model, I used the same concepts as investigating the measurement model, which included inspecting the VIF metrics. Much debate exists regarding the upper VIF limits. Some authors advise that a VIF value of 5 or more provides evidence that a problem of collinearity may potentially exists (Hair et al., 2011) (Hair, 2014). If this issue did arise, I would investigate for collinearity problems among the predictor variables to determine if critical levels are present (Hair, 2014).

If it was discovered that the VIF values are at a value of 5 or more, which indicates a potential collinearity issue, the decision to eliminate constructs should be explored (Hair, 2014). The PLS algorithm was run, and the output was investigated as recommended (Hair, 2014). The results of the PLS algorithm are displayed in Figure 12.

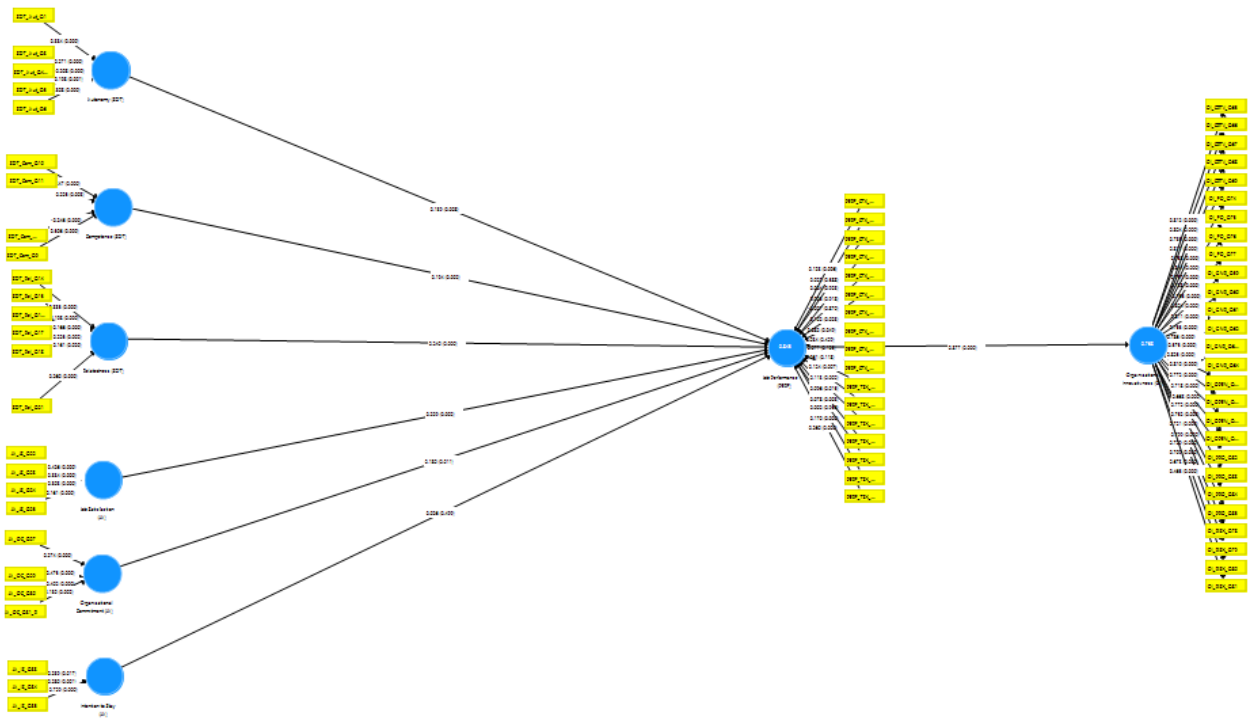

Figure 12 Structural (Inner) Model

Next, I investigated the structural model for collinearity issues. The VIF values within the structural (Inner) model were examined to validate that the latent constructs of the model were within the threshold limits.

Table 16 displays the collinearity statistics. The information gathered in Table 16 indicates that organizational commitment (JA) and relatedness (SDT) had values that were higher than the threshold of 5, which in some literature is the VIF limit regarding collinearity. Although higher than 5, the VIF values were lower than 10, which is also reported in the literature as an upper limit of collinearity (O'Brien, 2007). O'Brien (2007) argued that having a VIF above 4 or even 10 can be acceptable in light of having many indicators and all other significant values being acceptable. Salmerón et al. (2013) also discussed a VIF limit of 10 and recommended viewing the decision to drop constructs with discretion. Completing research regarding VIF values above 5, my conclusion was to maintain the current integrity and structure of the model, as well as move forward with the analysis.

Table 16 Summary of Inner Model VIF Analysis

	Autonomy (SDT)	Competence (SDT)	Intention to Stay (JA)	Job Perf. (PERF)	Job Sat. (JA)	Org. Innovat. (OI)	Org. Commit. (JA)	Relatedness (SDT)
Autonomy (SDT)				3.542				
Competence (SDT)				3.099				
Intention to Stay (JA)				2.134				
Job Perf. (PERF)						1		
Job Sat. (JA)				4.932				
Org. Innovat. (OI)								
Org. Commit. (JA)				5.946				
Relatedness (SDT)				5.049				

IV.3.3.2 Evaluate the Significance and Relevance of the Model Relationships

To evaluate the significance and relevance of the model relationships, I reviewed the path coefficients in the PLS-SEM structural model. The path coefficients provide evidence of the hypothesized relationships among the latent variables in the model (Hair, 2014). The evaluation of the path coefficient total effects provides evidence of how much the exogenous latent variables influence the endogenous latent variables (Hair, 2014). The standardized values of the path coefficients range from -1 to +1. The path coefficients with values closer to +1 indicate a strong positive relationship between constructs. Conversely, the path coefficients with values closer to -1 indicate a strong negative relationship between constructs. Values closer to 0 indicate a weaker relationship. The strong path coefficients are usually statistically significant (Hair, 2014).

This effect is important in the PLS-SEM structural model to access the strength of relationships between constructs.

The bootstrapping procedure was run again to analyze the relationships between constructs (path coefficients). Figure 13 displays the bootstrapped structural (inner) model.

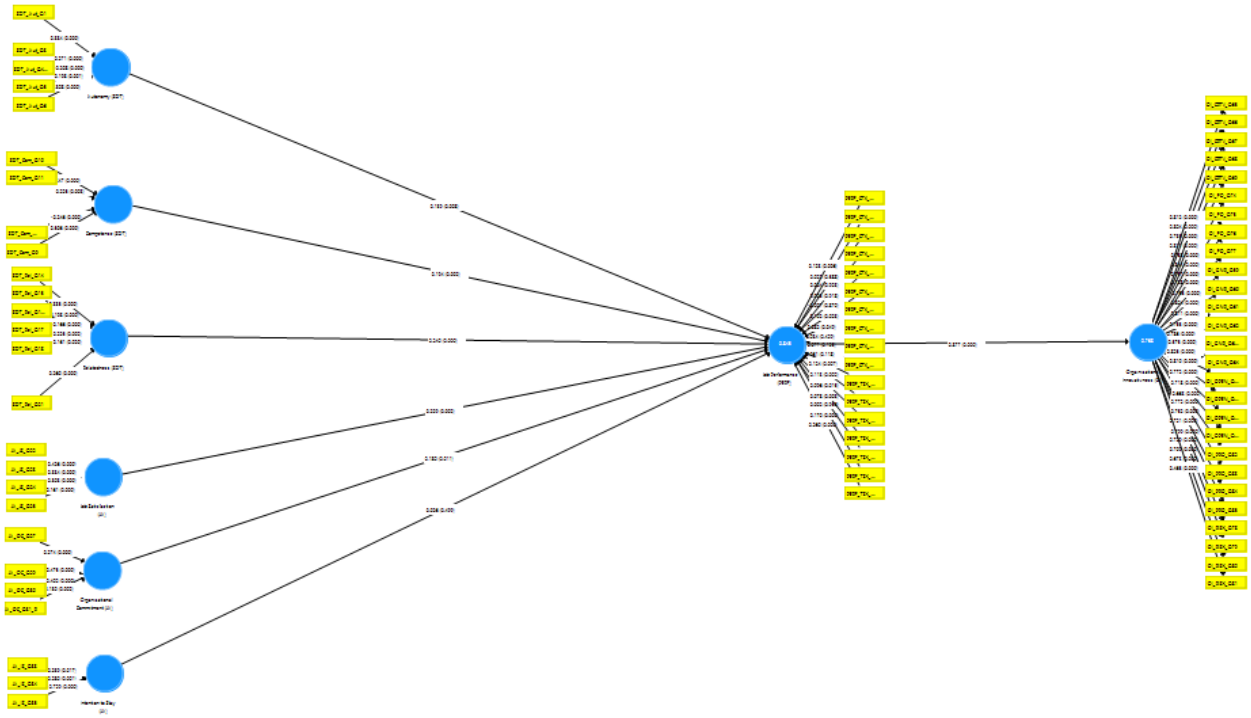

Figure 13 Bootstrapped Structural (Inner) Model

The analysis output is summarized in Table 17. This table provides information regarding the path coefficients. The table provides the path coefficient, along with information on whether the path is significant at a <.05 level (95% confidence level). All paths were significant except the path between intention to stay (JA) and job performance (PERF) (P-value 0.499).

The paths with the strongest relationships are:

• Job Performance (PERF) -> Organizational Innovativeness (OI) (0.877)

• Relatedness (SDT) -> Job Performance (PERF) (0.24)

• Job Satisfaction (JA) -> Job Performance (PERF) (0.229)

Table 17 Path Coefficients (Structural Model)

	Path Coefficients	T Statistics	P Values	Significant (<.05)
Autonomy (SDT) -> Job Performance (PERF)	0.139	2.659	0.008	Yes
Competence (SDT) -> Job Performance (PERF)	0.194	3.168	0.002	Yes
Intention to Stay (JA) -> Job Performance (PERF)	0.026	0.676	0.499	No
Job Performance (PERF) -> Organizational Innovativeness (OI)	0.877	32	0	Yes
Job Satisfaction (JA) -> Job Performance (PERF)	0.229	3.152	0.002	Yes
Organizational Commitment (JA) -> Job Performance (PERF)	0.18	2.535	0.011	Yes
Relatedness (SDT) -> Job Performance (PERF)	0.24	3.82	0	Yes

To analyze the strength of the influence of the source variable on the target variable, the total effects are inspected. All the independent variables are significant at a <.05 level (95% confidence level), except intention to stay (JA) -> job performance (PERF) (0.499) and intention to stay (JA) -> organizational innovativeness (OI) (0.504). Table 18 shows a summary of the total effects.

Table 18 Summary of Total Effects

	Total Effect	T Statistics	P Values	Significant (<.05)
Autonomy (SDT) -> Job Performance (PERF)	0.139	2.659	0.008	Yes
Autonomy (SDT) -> Organizational Innovativeness (OI)	0.122	2.624	0.009	Yes
Competence (SDT) -> Job Performance (PERF)	0.194	3.168	0.002	Yes
Competence (SDT) -> Organizational Innovativeness (OI)	0.17	3.233	0.001	Yes
Intention to Stay (JA) -> Job Performance (PERF)	0.026	0.676	0.499	No
Intention to Stay (JA) -> Organizational Innovativeness (OI)	0.023	0.668	0.504	No
Job Performance (PERF) -> Organizational Innovativeness (OI)	0.877	32	0	Yes
Job Satisfaction (JA) -> Job Performance (PERF)	0.229	3.152	0.002	Yes
Job Satisfaction (JA) -> Organizational Innovativeness (OI)	0.201	3.141	0.002	Yes
Organizational Commitment (JA) -> Job Performance (PERF)	0.18	2.535	0.011	Yes

Organizational Commitment (JA) -> Organizational Innovativeness (OI)	0.158	2.458	0.014	Yes
Relatedness (SDT) -> Job Performance (PERF)	0.24	3.82	0	Yes
Relatedness (SDT) -> Organizational Innovativeness (OI)	0.21	3.693	0	Yes

IV.3.3.3 Evaluate the Coefficient of Determination

Next, I evaluated the coefficient of determination within the structural model. The R^2 value is the focus of this exercise to define the explained variance within the model. The coefficient of determination is a commonly used measurement in the context of the structural model. The coefficient, which is represented as the squared correlation (R^2), measures the model's predictive by determining the difference between a select endogenous latent variables predictive and actual values (Hair, 2014).

The coefficient of determination is an important predictor of explained variance within a path model. The coefficient is the level of variance in the endogenous latent variable that is explained by all exogenous latent variables connected to it (Hair, 2014).

Higher values of predictive accuracy are related to higher R-squared values, which range from 0 to 1. The generally agreed upon strength of the R-squared value depends on the complexity of the model as well as on the type of research being conducted. Marketing research routinely reports R^2 values for endogenous latent variables at 0.75 (substantial), 0.50 (moderate), and 0.25 (weak), respectively, as a rule of thumb (Hair et al., 2011; Hair, 2014; Henseler et al., 2009).

In previous studies, researchers agreed that the adjusted R-squared value can be used to represent the standard employed to avoid any bias involved in a complex path model (Hair, 2014).

Table 19 shows the report summary after completing the PLS algorithm. The output displays the R-squared and R-squared adjusted values to provide evidence that job performance (PERF) and organizational innovativeness (OI) are above the strong predictive power threshold (>0.75), with job performance (PERF), R^2 0.845, R^2 adjusted 0.842, and organizational innovativeness (OI), R^2 0.768, R^2 adjusted 0.768, respectively.

Table 19 R^2 Values

	R^2	R Adjusted	Predictive Power
Job Performance (PERF)	0.845	0.842	Substantial
Organizational Innovativeness (OI)	0.768	0.768	Substantial

IV.3.3.4 Evaluate the Effect Size

The structural model effect size (f^2) was evaluated next. To access the impact on the R^2 value when omitting an exogenous latent construct from the path model, the f^2 effect size was utilized.

This evaluation reveals whether the exogenous latent variable omitted from the model has a substantive effect on the endogenous latent variables (Hair, 2014).

Previous research has provided guidance for interpreting effect size. The general rule of thumb for measuring the effect (f^2) of removing the exogenous latent variable from the model are 0.02 (small), 0.15 (medium), and 0.35 (large), respectfully (Cohen, 1988). If an effect size value is reported as below 0.02, this indicates no effect was discovered (Hair, 2014).

The effect size was investigated to determine the overall impact of each endogenous variable on the model. Table 20 shows the summary of my analysis. The largest effect size was noted for competence (SDT) -> job performance (PERF) f^2 0.078, job performance (PERF) -> organizational innovativeness (OI) f^2 3.318, job satisfaction (JA) -> job performance f^2 0.068, (PERF) and relatedness (SDT) -> job performance (PERF) f^2 0.073 variable paths.

Table 20 F^2 Effect Size

	f-Square	T Statistics	P Values	Significant	Effect Size
Autonomy (SDT) -> Job Performance (PERF)	0.035	1.152	0.249	No	Medium
Competence (SDT) -> Job Performance (PERF)	0.078	1.535	0.125	No	Large
Intention to Stay (JA) -> Job Performance (PERF)	0.002	0.203	0.839	No	No Effect
Job Performance (PERF) -> Organizational Innovativeness (OI)	3.318	2.844	0.004	Yes	Large
Job Satisfaction (JA) -> Job Performance (PERF)	0.068	1.512	0.131	No	Large
Organizational Commitment (JA) -> Job Performance (PERF)	0.035	0.988	0.323	No	Medium
Relatedness (SDT) -> Job Performance (PERF)	0.073	1.575	0.115	No	Large

IV.3.3.5 Blindfolding and Predictive Relevance (Q^2)

In addition to evaluating the coefficient of determination (R^2) results in the structural model, the blindfolding procedure should be conducted as a criterion of predictive accuracy. The blindfolding procedure produces a Stone-Geisser Q^2 value. Q^2 coefficients are another indication of the model's predictive strength. "Another test applied in PLS models is the Stone-Geisser test of predictive relevance. This test can be used as an additional assessment of model fit in PLS analysis (Geisser, 1975; Stone, 1974). The Q^2 statistic is a jackknife version of the R^2statistic. According to Chin (1998), the "Q2 represents a measure of how well observed values are reconstructed by the model and its parameter estimates." Additional information regarding Q2 values is "Models with Q2 greater than zero are considered to have predictive relevance. Models with higher positive Q2 values are considered to have more predictive relevance" (Götz et al., 2010). The calculation is achieved by removing data points from the model and then re-estimating the model parameters to predict the removed data points (Hair et al., 2019). "In analogy to the effect-size f^2 evaluation, the relative impact of the predictive relevance can be assessed by means of the measure q^2: values of 0.02, 0.15, and 0.35 reveal a small, medium, or large predictive relevance of a certain latent variable, thus explaining the endogenous latent variable under evaluation" (Henseler et al., 2009). "Q^2 values larger than 0 suggest that the model has predictive

relevance for a certain endogenous construct. In contrast, values of 0 and below indicate a lack of predictive relevance" (Hair et al., 2016). The blindfolding procedure was executed, producing the values for job performance (PERF), 0.426, and organizational innovativeness (OI), 0.426, per the summary output in table 21.

Table 21 Structural Model Summary Statistics

	SSO	SSE	Q^2 (=1-SSE/SSO)
Autonomy (SDT)	1650	1650	
Competence (SDT)	1320	1320	
Intention to Stay (JA)	990	990	
Job Performance (PERF)	5610	3221.665	0.426
Job Satisfaction (JA)	1320	1320	
Organizational Innovativeness (OI)	8910	5117.091	0.426
Organizational Commitment (JA)	1320	1320	
Relatedness (SDT)	1980	1980	

IV.3.3.6 Model Fit Analysis - Standardized Root Mean Square Residual (SRMR)

Although there is ongoing debate regarding the usefulness of analyzing the SRMR values in PLS-SEM, I include this information within the overall structural analysis as additional information that supports the overall goodness of the model. "The notion of model fit as known from CB-SEM is not fully transferable to PLS-SEM as the method follows a different aim when estimating model parameters (i.e., maximizing the explained variance instead of minimizing the divergence between covariance matrices)"(Hair, 2016).

"The SRMR is an absolute measure of fit and is defined as the standardized difference between the observed correlation and the predicted correlation. It is a positively biased measure and that bias is greater for small N and for low df studies. Because the SRMR is an absolute measure of fit, a value of zero indicates perfect fit. The SRMR has no penalty for model complexity. A value less than .08 is

generally considered a good fit" (Hu & Bentler, 1999). Per the recommended SRMR limit of less than .08, the model indicates a good fit, with a .06 value, as displayed in Table 22.

Table 22 Standardized Root Mean Square Residual (SRMR)

	Saturated Model	Estimated Model
SRMR	0.055	0.06

IV.3.3.7 Evaluate the Mediation Effects

The next step in the analytical procedure was an evaluation of the mediation effects. Mediation occurs when the presence of a third variable acts as a path (or conduit) between two other variables. If the exogenous variable changes, this change is propagated to the mediator construct, which then changes the endogenous variable in the PLS path model environment (Hair, 2014).

I searched for mediation in the model by reviewing the specific mediation indirect effects and the total mediation indirect effects analyses. Within the structural model, a direct effect is observed when two variables are directly connected by a single connector (Hair, 2014).

It is important to note the difference between direct effects and indirect effects when evaluating for mediation. An indirect effect can be explained as the effect between two latent variables with, at a minimum, one other intervening latent variable involved in the relationship. A direct effect refers to the relationship between two latent variables that do not have a third variable in their path; hence they are directly connected to each other (Hair, 2014). The summary output in Tables 23 and 24 provide the specific indirect effects and the total indirect effects.

Table 23 Specific Mediation Indirect Effects

	Specific Indirect Effect	T Statistics	P Values	Significant (<.05)
Autonomy (SDT) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.122	2.624	0.009	Yes
Competence (SDT) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.17	3.233	0.001	Yes
Intention to Stay (JA) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.023	0.668	0.504	No
Job Satisfaction (JA) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.201	3.141	0.002	Yes
Organizational Commitment (JA) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.158	2.458	0.014	Yes
Relatedness (SDT) -> Job Performance (PERF) -> Organizational Innovativeness (OI)	0.21	3.693	0	Yes

Table 24 Total Mediation Indirect Effects

	Total Indirect Effect	T Statistics	P Values	Significant
Autonomy (SDT) -> Job Performance (PERF)				
Autonomy (SDT) -> Organizational Innovativeness (OI)	0.122	2.624	0.009	Yes
Competence (SDT) -> Job Performance (PERF)				
Competence (SDT) -> Organizational Innovativeness (OI)	0.17	3.233	0.001	Yes
Intention to Stay (JA) -> Job Performance (PERF)				
Intention to Stay (JA) -> Organizational Innovativeness (OI)	0.023	0.668	0.504	No
Job Performance (PERF) -> Organizational Innovativeness (OI)				
Job Satisfaction (JA) -> Job Performance (PERF)				
Job Satisfaction (JA) -> Organizational Innovativeness (OI)	0.201	3.141	0.002	Yes
Organizational Commitment (JA) -> Job Performance (PERF)				
Organizational Commitment (JA) -> Organizational Innovativeness (OI)	0.158	2.458	0.014	Yes
Relatedness (SDT) -> Job Performance (PERF)				
Relatedness (SDT) -> Organizational Innovativeness (OI)	0.21	3.693	0	Yes

IV.3.3.8 Evaluate the Moderation Effects

Evaluating the moderating effect of motivation on the self-determination theory constructs (autonomy, competence, and relatedness) and the job attributes constructs (job satisfaction, organizational commitment, and intention to stay) was the next step in the analysis process. A moderation is defined as the effect a third variable has on the relationship between two other variables. The third variable can not only can influence the strength of the relationship between the two variables, but also can change the direction of the relationship between the two variables (Hair, 2014).

Each of the paths within the structural model were analyzed separately. I focused my attention on investigating the moderating effect on each link between the self-determination theory constructs (autonomy, competence, and relatedness) and the job attributes constructs (job satisfaction, organizational commitment, and intention to stay) to job performance (PERF).

The two-stage method has been recommended for analyzing a moderating effect that includes a formative exogenous latent variable and/or a formative moderator (Chin et al., 2003). I chose to utilize a two-stage approach to conduct the moderation analysis, based on the exogenous and endogenous constructs in the moderated path being formative.

In this analysis, I separately built an interaction term that is hypothesized to moderate the relationship between the endogenous latent construct job performance (PERF) and each exogenous latent construct in a separate procedure. The two-stage approach that uses an interaction term was applied to the model for each path between latent variables, per the recommendations for formative constructs (Hair, 2014). The PLS algorithm and the bootstrapping procedures were executed for each hypothesized moderating effect. After completing the analysis, I inspected the significance and the F-squared effect sizes. Kenny (2016) provided guidance for interpreting the effect sizes, as 0.005 (small), 0.01 (medium), and 0.025 (large) to evaluate the impact of the moderating effect (Hair, 2014). The output of the analysis was investigated for each hypothesized moderation effect. The significance of the hypothesized moderating interaction term was analyzed next in my procedure. If I discovered that the effect of the

interaction term on the endogenous latent variable was at a significant level (<.05), then the moderator has been shown to provide an overall moderating effect on the relationship between the latent variables (Hair, 2014). The strength of the relationship also reportedly provides insight into the overall structural model and further information for hypotheses reporting. If the moderation was found to be significant, the next focus should be on determining the strength of the moderating effect is (Hair, 2014).

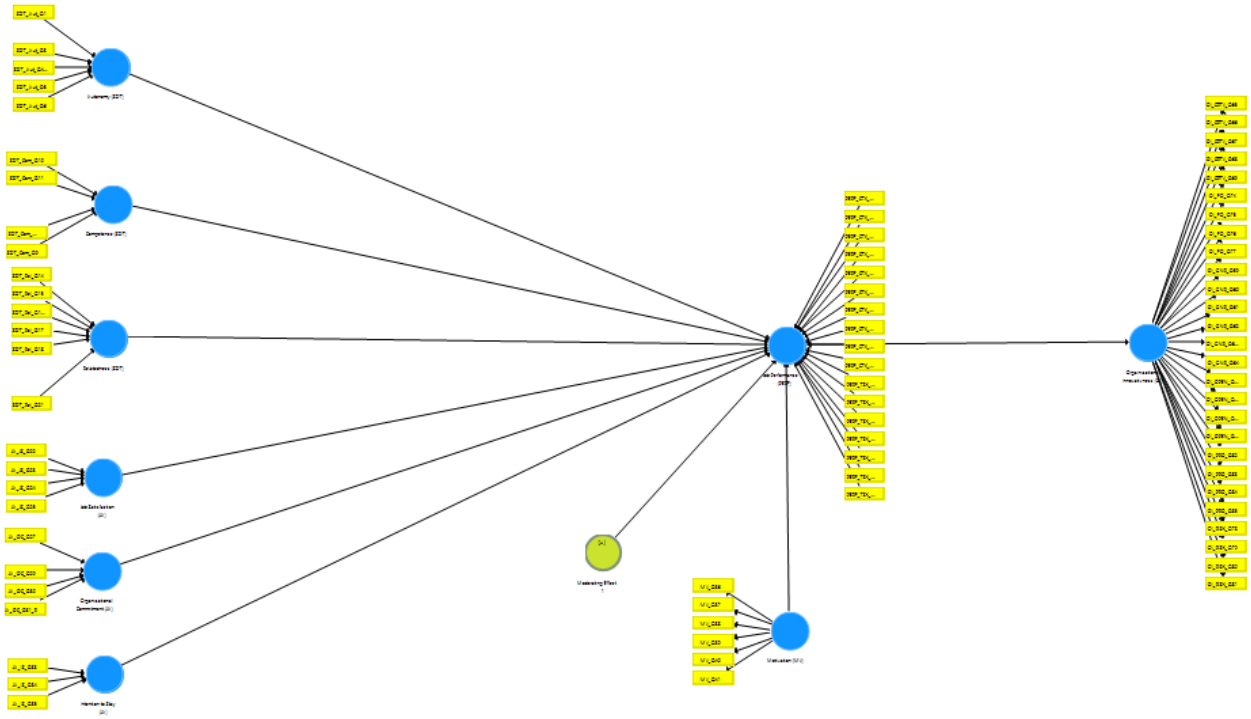

Figure 14 Structural Model with Interaction Term (Moderation Analysis)

The analysis continued, by reviewing the PLS algorithm and the bootstrapping procedure results. The focus of this analysis was on the level of significance regarding the interaction terms. The moderating interaction coefficient in Table 25 highlights the significance of the interaction terms. The analysis reveals that the moderated path between the constructs of self-determination theory (autonomy, competence, and relatedness) and job attitudes (job satisfaction, organizational commitment, and intention to stay) to job performance did not obtain a significance level below the .05 threshold.

Table 25 Moderating Interaction Coefficient

Moderator	Moderated Path	Interaction Coefficient	T Statistics	P Values	Significance
Motivation	Autonomy (SDT) --> Job Performance (PERF)	-0.01	0.673	0.501	No
	Competence (SDT) --> Job Performance (PERF)	-0.009	0.709	0.478	No
	Relatedness (SDT) --> Job Performance (PERF)	-0.011	0.799	0.424	No
	Job Satisfaction (JA) --> Job Performance (PERF)	-0.011	0.934	0.35	No
	Organizational Commitment (JA) --> Job Performance (PERF)	-0.006	0.352	0.725	No
	Intention to Stay (JA) --> Job Performance (PERF)	-0.008	0.446	0.656	No

I reviewed the moderating terms F^2 (effect size) provided in the analysis information. Kenny (2016) provided guidance on the moderating terms F^2 (effect size), which are 0.005 (small), 0.01 (medium), and 0.025 (large) (Hair, 2014). The effect size of the interaction terms (motivation and relatedness) and (motivation and job satisfaction) resulted in a small moderation effect. The effect size of the remaining interaction terms motivation and autonomy, motivation and competence, motivation and organizational commitment, and motivation and intention to stay were below the small threshold, as displayed in Table 26.

Table 26 Moderating Terms F^2 (Effect Size)

	F^2 Job Performance	Size of Moderation Effect
Interaction Term (Motivation and Autonomy)	0.004	Below Small
Interaction Term (Motivation and Competence)	0.003	Below Small
Interaction Term (Motivation and Relatedness)	0.005	Small
Interaction Term (Motivation and Job Satisfaction)	0.005	Small
Interaction Term (Motivation and Organizational Commitment)	0.001	Below Small
Interaction Term (Motivation and Intention to Stay)	0.002	Below Small

IV.4 Primary Results – Hypotheses Summary

The hypotheses in this study were evaluated by examining the coefficient, effect size, and significance as relevant between the latent constructs of the model. This evaluation provided information regarding the relationships between the proposed latent variables to advance hypothesis testing. The coefficient, effect size, and significance provide support for the proposed hypotheses. Significance levels were inspected to ensure a type I error (rejecting a true null hypothesis) was avoided. Significance levels were also inspected for a type II error (not rejecting a false null hypothesis). P-values below .05 indicate that the relationship under consideration is significant, at a 95% confidence level. Below is a summary of the hypotheses results. Also, see Table 27, which represents the results in table format.

- *H1: The analysis supports that perceived autonomy has a positive effect on perceived individual performance.*

Coefficient β (.139), Effect size f^2 (.035), Significance Yes – Hypothesis Supported

- *H2: The analysis supports that perceived competence has a positive effect on perceived individual performance.*

Coefficient β (.194), Effect size f^2 (.078), Significance Yes – Hypothesis Supported

- *H3: The analysis supports that perceived relatedness has a positive effect on perceived individual performance.*

Coefficient β (.24), Effect size f^2 (.073), Significance Yes – Hypothesis Supported

- *H4: The analysis does not support that perceived intention to stay has a positive effect on perceived individual performance.*

Coefficient β (.026), Effect size f^2 (.002), Significance No – Hypothesis Not Supported

- *H5: The analysis supports that perceived job satisfaction has a positive effect on perceived individual performance.*

Coefficient β (.229), Effect size f^2 (.068), Significance Yes – Hypothesis Supported

- *H6: The analysis supports that perceived organizational commitment has a positive effect on perceived individual performance.*

Coefficient β (.18), Effect size f^2 (.335), Significance Yes – Hypothesis Supported

- *H7: The analysis does not support that motivation moderates the impact of autonomy on perceived individual performance.*

P-value (0.501), Effect size f^2 (.004), Significance No – Hypothesis Not Supported

- *H8: The analysis does not support that motivation moderates the impact of competence on perceived individual performance.*

P-value (0.478), Effect size f² (.003), Significance No – Hypothesis Not Supported

- *H9:* The analysis does not support that *motivation moderates the impact of relatedness on perceived individual performance.*

P-value (0.424), Effect size f² (.005), Significance No – Hypothesis Not Supported

- *H10: The analysis does not support that motivation moderates the impact of intention to stay on perceived individual performance.*

P-value (0.656), Effect size f² (.002), Significance No – Hypothesis Not Supported

- *H11: The analysis does not support that motivation moderates the impact of job satisfaction on perceived individual performance.*

P-value (0.35), Effect size f² (.005), Significance No – Hypothesis Not Supported

- *H12: The analysis does not support that motivation moderates the impact of organizational commitment on perceived individual performance.*

P-value (0.725), Effect size f² (.001), Significance No – Hypothesis Not Supported

- *H13: The analysis supports that perceived job performance has a positive effect on perceived organizational Innovativeness.*

Coefficient β (.877), Effect size f² (3.318), Significance Yes – Hypothesis Supported

Table 27 Hypotheses Results Summary

No.	Hypothesis	Coefficient β	P Values	Effect size f²	Hypothesis supported?
H1	Perceived autonomy has a positive effect on perceived individual performance.	0.139	0.008	0.035	Yes
H2	Perceived competence has a positive effect on perceived individual performance.	0.194	0.002	0.078	Yes
H3	Perceived relatedness has a positive effect on perceived individual performance.	0.24	0	0.073	Yes
H4	Perceived intention to stay has a positive effect on perceived individual performance	0.026	0.499	0.002	No
H5	Perceived Job Satisfaction has a positive effect on perceived individual performance	0.229	0.002	0.068	Yes
H6	Perceived Organizational Commitment has a positive effect on perceived individual performance	0.18	0.011	0.335	Yes

H7	Motivation moderates the impact of Autonomy on perceived individual performance		0.501	0.004	No
H8	Motivation moderates the impact of Competence on perceived individual performance		0.478	0.003	No
H9	Motivation moderates the impact of relatedness on perceived individual performance		0.424	0.005	No
H10	Motivation moderates the impact of intention to stay on perceived individual performance		0.656	0.002	No
H11	Motivation moderates the impact of Job Satisfaction on perceived individual performance		0.35	0.005	No
H12	Motivation moderates the impact of Organizational Commitment on perceived individual performance		0.725	0.001	No
H13	Perceived job performance has a positive effect on perceived organizational Innovativeness	0.877	0	3.318	Yes

V CHAPTER 5: DISCUSSION

This study focused on the impact of self-determination theory (SDT) and job attitudes (JA) on job performance (JP) and, ultimately, organizational innovativeness (OI). One of the goals of the study was to answer the research question: How and why does self-determination impact employee performance and innovation in IT operations organizations?. My second goal was to extend the research and understanding of self-determination theory in the context of IT operations departments. I expected to define the relationships of self-determination theory and job attitudes, while observing the influence of motivation on overall job performance. In general, the results show that, although the constructs of self-determination theory (autonomy, competence, and relatedness) and the constructs of job attitudes (intention to stay, job satisfaction, and organizational commitment) did have a positive effect on job performance and ultimately, organizational innovativeness, several key assumptions were proved to be non-impactful in the overall hypothesized model.

V.1 Key Findings

Key Finding #1: Intention to stay is not a significant predictor of job performance and, ultimately, organizational innovativeness.

My findings regarding the overall positive relationship between autonomy, competence, relatedness, job satisfaction, organizational commitment, and job performance supported previous research in this area. However, intention to stay as an antecedent to predicting job performance was found to be an insignificant influence on job performance.

Implications: As human resources leaders and management professionals are evaluating their workforce, special consideration should be given to employee retention strategies as they may not provide the outcomes expected in regards to retaining high performing individuals. In fact the employees who intend to stay with an organization may be performing at a low level and ultimately dragging down performance for the group.

Key Finding #2: Motivation was not found to be a significant influence on job performance when autonomy, competence, relatedness, job satisfaction, and organizational commitment existed.

Although a great deal of emphasis is placed on motivation in the workplace, the results function as evidence that, once the constructs of self-determination theory (autonomy, competence, and relatedness) and positive job attitudes (job satisfaction and organizational commitment) are instituted in an organization, putting motivational effort into the environment has little impact. This suggests that there should be an emphasis on instilling the abovementioned traits of self-determination theory and positive job attitudes before providing "cheerleading" in the organization, as this has little effect if the proper work environment is already in place.

Implications: Managers and human resources groups should develop programs that first build and ensure the constructs of self-determination theory (autonomy, competence, and relatedness) and positive job attitudes (job satisfaction and organizational commitment) are deeply embedded in the organization prior to any such ancillary activities as "team building events" or "ice cream socials." A great deal of attention is paid to motivating antecedents to job performance, but this time and effort may be better invested in providing projects that employees find interesting and engaging.

Key Finding #3: The constructs of self-determination theory (autonomy, competence, and relatedness) and positive job attitudes (job satisfaction and organizational commitment) were found to significantly influence job performance and organizational innovation.

Job performance was found to be a key driver of organizational innovation within the IT operations organization. This reinforces the concept that, by providing engaging work to employees, job performance increases throughout the IT operations organization. The primary objective of this study was to determine whether the constructs of self-determination theory and job attitudes provided significant evidence of increased job performance. This relationship was concluded to be significant and positive.

Implications: Managers should provide opportunities for employees to work on interesting projects that are in line with overall organizational goals. Working on engaging projects strengthens the antecedents of job performance and, ultimately, provides organizational innovativeness within departments, which then spread throughout the organizational culture. Despite recognizing that not all work can be interesting and engaging, engendering open communication with employees about the projects on which they enjoy working benefits both the employee and the organization.

V.2 Research Contributions and Limitations

V.2.1 Contribution to Theory

There has been little documentation in previous research providing clear evidence linking the constructs of self-determination theory (autonomy, competence, and relatedness) and positive Job attitudes (job satisfaction and organizational commitment) to job performance in IT operations departments. This study adds to the body of knowledge regarding how the constructs of self-determination theory can be measured in a PLS-SEM framework and applied to analyzing job performance and organizational innovativeness. This study took a novel approach to relating the individual constructs of self-determination theory and analyzing the effects on a measurement of overall job performance and organizational behavior theories. Extant literature lacks the type of theoretical model used in this research to link the constructs of this study. This study also provided evidence regarding the impact of motivation on job performance and organizational innovativeness. Prior research indicated that motivation significantly affects performance and innovation. This study revealed that motivation produces little impact if positive influences are already in place, such as autonomy, competence, relatedness, job satisfaction, and organizational commitment.

V.2.2 Contribution to Practice

This study was focused on IT operations groups and the overall benefits of providing support for IT employees. Managers and human resources groups can leverage the results of this study to gain a better understating of where to focus their efforts in promoting job performance and overall organizational innovativeness. In already-lean financial and personnel environments, this clear direction

can provide substantial results in job performance and organizational innovativeness. This work can also be generalized outside of IT operations departments. The findings from this study provide evidence of antecedents of job performance that should transcend an individual department, such as IT operations, and can be applied to a broader audience. This knowledge can be applied to multiple departments and industries outside of the technology sector. Future human resource training plans can highlight the findings of this study to provide training to leaders, regarding the application of techniques that foster work environments, which may enhance the aspects of self-determination theory within the workforce.

This study also provides evidence that a focus on motivation is not a significant influence on job performance, if employees demonstrate significant amounts of autonomy, competence, relatedness, job satisfaction, and organizational commitment. This knowledge should furnish human resources departments the ability to focus on these attributes to better influence job performance. For example, HR departments can distribute surveys to measure the level of self-determination and job attitudes throughout the employee population, to set a benchmark of how employees rank in each respective category. The results can be analyzed to determine whether these attributes are lacking, and programs can be designed to increase them throughout the organization. Also, the employees can participate in regular "checkup" surveys to determine whether levels are maintaining, decreasing, or, optimally, increasing. If levels are decreasing, additional focus may be applied to the management level to help them address the decline.

As represented in this study, job performance significantly influences organizational innovativeness. This knowledge provides a path for managers to access the level of organizational innovativeness and implement strategic methods to advance in this area. One idea is to evaluate the level of organizational innovativeness repeatedly through regular surveys distributed to employees within a specific group and also to employees in outside cross-functional groups. An example involves evaluating how a group, such as IT operations, views its level of organizational innovativeness, and also evaluating how a department, such as marketing or sales, views that same department to determine whether a gap exists. In many cases, a group can benefit from an outside opinion to ensure alignment of the viewpoints.

If it is determined the evaluators outside of the department feel organizational innovativeness is low, leadership can evaluate job performance, and ultimately, the antecedents of job performance defined in this study. It may be determined that an attribute such as autonomy is low, and thereby impacting job performance and, ultimately, organizational innovativeness. This lack of autonomy can be emphasized to ensure levels are increased, resulting in positive increases throughout the theoretical model proposed in this study.

Another interesting finding was the fact that intention to stay was not found to significantly influence job performance. This may demonstrate that the people who are seeking long term employment at a company may simply be getting by until a perceived retirement package is offered and they can leave the company. In many cases, the employee has been with the company for several years and may view their position as untouchable, due to the knowledge they have gained over the years. This may lead to a high level of intention to stay and a low level of job performance. This scenario would represent a drag on the department and the organization sacrifices time due to lost productivity.

Another thought is that, while an employee is performing well, they may be doing so to ultimately gain the necessary skills to work elsewhere. In this scenario, the employee is performing well, but doing so only to gain sufficient knowledge to leave for greener pastures as soon as possible. In this situation, high turnover is costly and inefficient for the organization. This situation is harder to detect, as the employee appears to be engaged and performing optimally, but is ready to utilize the newly developed skills somewhere else.

V.2.3 Limitations and Recommendations for Future Research

Common among all research pursuits, this study did have some limitations. Employing only a quantitative approach provided results that may have been enhanced by conducting interviews and adding qualitative procedures to the analysis. A qualitative approach may have highlighted specific patterns in the participant's response that may not have been highlighted in this research study that relied exclusively on quantitative methods. Open ended questions could have been utilized to give survey participants the

opportunity to elaborate on influencing factors, such as their perceived happiness (outside influences indicating how they are feeling in general, which would include non-work related emotional well-being) and other attributes that may have aided in the research analysis.

Although the focus of this study was intentionally limited to employees in IT operations organizations, an interesting extension of this research may be to expand the study outside of the IT operations organization to include the overall company workforce. This expanded audience may provide a broad view of job performance and organizational innovativeness, which can be tied further to company financial performance. Viewing organizational innovativeness through the lens of an entire company may provide future insight into how the constructs of self-determination theory, job attitudes, and job performance impact organizational innovativeness.

Additionally, financial performance information could be an interesting variable to measure in future studies to determine, if the constructs used in this study are related to the overall financial health of an organization. This additional financial performance information may be useful for established organizations, as well as startup companies seeking to provide their HR departments with the strategic vision to measure levels of self-determination and job attitudes appropriately.

Although this study did provide descriptive statistics for male and female survey participant demographic information, the issue regarding a low sample of female participants is worth noting. Having a larger group of female participants may have enhanced the analysis and provided additional insight into gender-specific correlation metrics. Common among the information technology workforce is a noticeable lack of female employees (Gopal et al., 1997). Future research could leverage gender in the analysis to study the impact of gender diversity on the model proposed in the current research study.

This study proposed the constructs of self-determination theory, job attitudes, and job performance as leading to organizational innovation. In future research, this model can be altered to propose that organizational innovativeness leads to job performance. In such a model, the constructs of

organizational innovativeness may serve as an interesting predictor of job performance. In this scenario, it is possible that working for a firm that is perceived as organizationally innovative leads to enhanced job performance within the company workforce. This may highlight the need to increase the traits of organizational innovativeness, which can then yield benefits, in terms of motivation, job performance, autonomy, competence, relatedness, job satisfaction, organizational commitment, and potentially, intention to stay. Further research in the area of motivation may provide evidence that motivation can play a significant role in a theoretical model that provides organizational innovativeness and motivation as antecedent constructs of job performance, the constructs of self-determination theory and job attitudes as defined in this study. Although motivation was not found to be a significant moderator in the present research study, these newly proposed relationships may highlight the impact of motivation on job performance in an alternative theoretical model. Further research can expand on the roles of organizational innovativeness, and include alterative mediators in the path model that may expose relationships that provide further insight into the way that the role job performance can be enhanced and analyzed in the domain of organizational behavior research.

Organizational innovativeness is a broad topic with many facets. Expanding future research to focus on the constructs that make up organizational innovativeness, which include creativity, openness, future orientation, risk-taking and proactiveness, as defined by Ruvio et al. (2014), may lead to further understating of how and why the constructs of self-determination theory and job attitudes are related.

APPENDICES

Appendix A: Informed Consent

Georgia State University
Executive Doctorate of Business
Informed Consent

Title: Organizational Innovativeness Among Employees in an IT Operations Organization: A Self-Determination Theory Perspective
Advisor: Wesley J. Johnston, Ph.D.
Student: Darrell Crull

Purpose
You are invited to participate in a research study that seeks to understand the attitudes of Information Technology professionals regarding Organizational Innovativeness among employees in a IT operations organization. You have been chosen for this study because you are a working IT professional in the United States. This study is recruiting 300 IT professionals. Your participation includes taking a 30-40-minute survey.

Procedure
If you decide to participate and meet the qualifications for this study, you will complete a 30-40 minute survey delivered through the Qualtrics survey platform.

Confidentiality
Records will be kept private to the extent required by data privacy laws. Wesley J. Johnston, Ph.D, Darrell Crull, and the advisory committee will have access to the survey results, which will be password-protected. Information may also be shared to the Georgia State University Institutional Review Board and the Office for Human Research Protection (OHRP). You will not be asked for your name or contact information, and we will use "Respondent #" rather than names. Findings will be summarized and reported in group form. You will not be personally identified.

Risks/Benefits
This study will not cause you any consequences or harm. This study will not benefit you individually; yet, we hope that the results of this study will benefit the management and human resources industry.

Compensation
You will be compensated in the amount agreed upon with your panel provider; this fee is collected from the researcher. Participants will be paid in full if respondents get to the end of the survey (even if they skip some questions). Participant may skip questions or stop participating at any time.

Voluntary Participation and Withdrawal
Your participation is voluntary; you can drop out at any time.

Contact
If you have questions or concerns, please contact Wesley J. Johnston at wesleyj@gsu.edu or Darrell Crull at dcrull1@student.gsu.edu. If you think you have been harmed by the study or you would like

to discuss your rights in this study, please contact the Georgia State University Office of Research Integrity at 404-413-3500 and/or via email at irb@gsu.edu.

Consent
If you agree to all of the above and would like to continue with the survey, please press continue. You have the option of printing this informed consent form for your records.

Appendix B: Summarized Survey Instrument

Questions 1-7 are qualifying questions with conditions to go to the end survey if qualifications are not met.

Questions 5-10 are general question regarding full time and entrepreneurial business.

Questions 1.1 - 3.8 are **Self Determination Theory**: Adapted from Koopmans et al., 2014.

1.1 - 1.7 – Autonomy

2.1 - 2.6 – Competence

3.1 - 3.8 - Relatedness

Questions 4.1 – 4.4 are **Job Satisfaction**. Adapted from Blau (1987), Susskind et al (2000).

Questions 5.1 – 5.5 are **Organizational Commitment:** Adapted from Bartol, K. (1979), Mathieu and Zajac (1990).

Questions 6.1 – 6.6 are **Intention to Stay:** Adapted Gary A. Markowitz.

Questions 7.1 – 7.6 are **Motivation**: Adapted from Survey Monkey https://www.surveymonkey.com/mp/employee-motivation-survey-template/.

Questions 8.1 – 8.17 are **Job Performance**: Adapted from Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Van Buuren, S., Van der Beek, A. J., & De Vet, H. C. (2014). Improving the individual work performance questionnaire using Rasch analysis. Journal of Applied Measurement, 15(2), 160-175.

8.1 – 8.7 Task performance

8.8 – 8.17 Contextual performance

Question 9.1 – 9.27 are **Organizational Innovativeness**: Adapted from Yıldıza S., Baştürkb F., Bozc I.T. (2014). The Effect of Leadership and Innovativeness on Business Performance.

9.1 – 9.6 General

9.7 – 9.11 Creativity

9.12 – 9.15 Openness to Change

9.16 – 9.19 Future Orientation

9.20 – 9.23 Risk Taking

9.24 – 9.27 Proactiveness

Question 10.1 – 10.3 are **General Demographics**

10.1 Sex (circle one)

Male (1)
Female (2)

10.2 Ethnic group membership (circle one):

African-American (1)
Asian (2)
Caucasian (3)
Hispanic (4)
Native American (5)
Other (6)

10.3 Highest Education Achieved (circle one):

Part High School (1)
High School Graduate (2)
Part College/Technical School (3)
College Graduate (4)
Master's Degree (5)
Advanced College Degree beyond Masters (6)

Appendix C: Interview Guide

Qualifying questions:

1. *Do you agree to participate in completing this survey exercise?*
2. *What is your current age?*
3. *What geographic region are you permanently located in?*
4. *Are you a Network Administrator?*
5. *Are you a System Administrator?*
6. *How many years of experience do you have as a Network Administrator?*
7. *How many years of experience do you have as a System Administrator?*

Constructs Measurement Items References

1. Autonomy:

1. I feel like I can make a lot of input into deciding how my job gets done.
2. I feel pressured at work.
3. I am free to express my ideas and opinions on the job.
4. When I am at work, I have to do what I am told.
5. My feelings are taken into consideration at work.
6. I feel like I can pretty much be myself at work.
7. There is not much opportunity for me to decide for myself how to go about my work.

2. Competence:

1. I do not feel very competent when I am at work.
2. People at work tell me I am good at what I do.
3. I have been able to learn interesting new skills on my job.
4. Most days, I feel a sense of accomplishment from working.
5. On my job, I do not get much of a chance to show how capable I am.
6. When I am working, I often do not feel very capable.

3. Relatedness:

1. I really like the people I work with.
2. I get along with people at work.
3. I pretty much keep to myself when I am at work.
4. I consider the people I work with to be my friends.
5. People at work care about me.
6. There are not many people at work that I am close to.
7. The people I work with do not seem to like me much.
8. People at work are pretty friendly toward me.

4. Job Satisfaction

1. Overall, I am pleased with my work.
2. Overall, I am satisfied in my current practice.
3. My work in this practice has met my expectations.
4. My current work situation is not a major source of frustration in my life.

Blau (1987), Susskind et al (2000)

5. Organizational Commitment

1. I would accept almost any type of job assignment in order to keep working for this organization.
2. I feel very little loyalty to this organization.

3. I am proud to tell others that I am part of this organization.
4. I talk up this organization to my friends as a great organization to work for.
5. It would take very little change in my present circumstances to cause me to leave.

Bartol, K. (1979), Mathieu and Zajac (1990)

6. Intention to Stay

1. I plan to leave this organization as soon as possible.
2. Under no circumstances will I voluntarily leave this organization before I retire.
3. I would be reluctant to leave this organization.
4. I plan to stay at this organization as long as possible.

Gary A. Markowitz

https://www.surveymonkey.com/mp/employee-motivation-survey-template/

7. Motivation

1. When at work, I am completely focused on my job duties.
2. I am determined to give my best effort at work each day.
3. I am often so involved in my work that the day goes by very quickly.
4. I am excited about going to work.
5. I feel completely involved in my work.
6. I am inspired to meet my goals at work.

Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Van Buuren, S., Van der Beek, A. J., & De Vet, H. C. (2014). Improving the individual work performance questionnaire using rasch analysis. Journal of applied measurement, 15(2), 160-175.

8. Job Performance

Task performance scale In the past 3 months…

1. I managed to plan my work so that it was done on time.
2. My planning was optimal.

3. I kept in mind the results that I had to achieve in my work.
4. I was able to separate main issues from side issues at work.
5. I knew how to set the right priorities.
6. I was able to perform my work well with minimal time and effort.
7. Collaboration with others was very productive.

Contextual performance scale In the past 3 months…

8. I took on extra responsibilities.
9. I started new tasks myself, when my old ones were finished.
10. I took on challenging work tasks, when available.
11. I worked at keeping my job knowledge up-to-date.
12. I worked at keeping my job skills up-to-date.
13. I came up with creative solutions to new problems.
14. I kept looking for new challenges in my job.
15. I did more than was expected of me.
16. I actively participated in work meetings.
17. I actively looked for ways to improve my performance at work.

9. Organizational Innovativeness

Yıldız, S., Baştürk, F., & Boz, İ. T. (2014). The effect of leadership and innovativeness on business performance. Procedia-Social and Behavioral Sciences, 150, 785-793.

Innovativeness questions

General

1. Our organization often implements fresh ideas.
2. Our organization seeks new ways to implement the work.
3. Our organization is creative in its working methods.
4. Our organization is generally the first in the market with the new products and services.

5. Innovation is accepted as a risk in our organization and it shows resistance to the innovation.

6. Our new products and services introduced to the market have increased over the last 5 years.

Shoham, A., Vigoda-Gadot, E., Ruvio, A., & Schwabsky, N. (2012). Testing an organizational innovativeness integrative model across cultures. Journal of Engineering and Technology Management, 29(2), 226-240.

Innovativeness questions

Creativity

7. Creativity is encouraged here

8. Managers here expect us to be resourceful problem solvers

9. We are constantly looking to develop and offer new or improved services

10. Our ability to function creatively is respected by the leadership

11. We are encouraged to use original approaches when dealing with problems in the workplace

Openness to change (This organization...)

12. Is always moving toward the development of new answers

13. Assistance in developing new ideas is readily available

14. Is open and responsive to changes

15. People here are always searching for fresh, new ways of looking at problems

Future orientation (This organization...)

16. Establishes a realistic set of future goals for itself

17. Effectively ensures that all managers and employees share the same vision of the future

18. Conveys a clear sense of future direction to employees

19. Has a realistic vision of the future for all departments and employees

Risk-taking (This organization...)

20. Believes that higher risks are worth taking for high payoffs
21. Encourages innovative strategies, knowing well that some will fail
22. Likes to take big risks
23. Does not like to ‘‘play it safe’’

Proactiveness

24. We are constantly seeking new opportunities for the organization
25. We take the initiative in an effort to shape the environment to our advantage
26. We are often the first to introduce new services
27. We usually take the initiative by introducing new administrative techniques

10. General Demographics

11 Sex (circle one)

Male (1)
Female (2)

12 Ethnic group membership (circle one):

African-American (1)
Asian (2)
Caucasian (3)
Hispanic (4)
Native American (5)
Other (6)

13 Highest Education Achieved (circle one):

Part High School (1)
High School Graduate (2)
Part College/Technical School (3)
College Graduate (4)
Master's Degree (5)
Advanced College Degree beyond Masters (6)

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VITA

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