

**AN EXAMINATION OF MANAGERIAL SUPPORT MEDIATED BETWEEN
TRANSFORMATIONAL LEADERSHIP AND INNOVATION BEHAVIOR**

by

Sheri Marnell

PAMELYN WITTEMAN, PhD, Faculty Mentor and Chair

WILLIAM McKIBBIN, PhD, Committee Member

DAWN VALENTINE, PhD, Committee Member

Todd C. Wilson, PhD, Dean School of Business, Technology, and Health Care Administration

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Abstract

The research used a nonexperimental quantitative research design to study the influence of transformational leadership style on employee innovation behavior mediated by managerial innovation support in American product innovators. The study contributed to the existing body of knowledge by examining the relationship between product innovation employees and the employee's leader. The study was essential to the business management field of study as the results help leaders understand how to increase innovation, setting organizations apart from the competition, which delivers stronger business. Transformational leadership theory was the root of the research and built upon Lukes and Stephan's theoretical model by understanding the relationship. The research utilized three instruments: Multifactor Leadership Questionnaire (MLQ) rater form to gather employee perceptions of the employee's leaders' style, Innovation Behavior Inventory (IBI) to gather self-reported innovation behaviors, and Innovation Support Inventory (ISI) to collect the potential mediated effect of managerial innovation support. Innovation and creativity in the workplace previously connected to the transformational leadership style, but existing research has not addressed managerial innovation support influenced between the employee's perception of the manager's transformational leadership style and employee's innovation behavior. The research utilized simple linear regression analysis to answer the first research question (RQ1), to what extent does transformational leadership style relate to employee innovation, and the second research question (RQ2), to what extent does managerial support relate to employee innovation behavior. A mediation analysis answered research question 3 (RQ3), to what extent does managerial support serve as a mediating variable between transformational leadership and employee innovation behavior. One hundred thirty-one participants ($N = 131$) volunteered to take the MLQ, IBI, and ISI. The study found that all

assumptions were met, all analysis showed significance, and alternate hypotheses were accepted, noting a partial mediation was discovered for RQ3. Employee innovation behavior significantly predicted transformational leadership style, $r(129) = .608$, $F(1, 129) = 75.76$, $p < .000$, with an r^2 .37. Employee innovation behavior significantly predicted managerial support, $r(129) = .55$, $F(1, 129) = 57.25$, $p < .000$, with an r^2 .31. Managerial support partially mediates transformational leadership and employee innovation behavior. A reduction in beta in the analysis led to partial mediation. Further studies are recommended to address what is driving the partial mediation versus a full mediation, analyze and use the study to issue the instruments to the employees' direct leader, and provide qualitative data to complement the quantitative study.

Dedication

To my husband, Tim, and my exceptional four children. Thank you for supporting me along my journey and never allowing me to give up when many times I wanted too. I would not be in this amazing place without you. Thank you for allowing me many weekends away and late nights working so I can focus on research and writing.

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Lastly, to all those choosing to read one of my most memorable personal accomplishments, this dissertation, my wish for you is that you, too, embrace the growth mindset and be inspired to be a forever learner as well.

“You only know what you know, until you choose to know more.” – Sheri Marnell

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CHAPTER 1. INTRODUCTION

Businesses strive to differentiate themselves from the competition and remain relevant in the marketplace through innovation (Shafie, Siti-Nabiha, & Cheng Ling, 2014). Businesses do not become innovative. Instead, businesses require innovative people at all levels of the organization in order to succeed. Leadership style is a critical driver in terms of how people perform at work. When business leaders use a transformational leadership style to drive innovation, providing a clear strategy and resource support, the result is more impactful strategic choices for the organization, and, more importantly, successful innovation that increases business (Jung, Chow, & Wu, 2003).

The transformational leadership style impacted the organization's innovation on several levels. Research has found the transformational leadership style influenced organizational culture, product development, and product innovation implementation (Shafie et al., 2014). Kentrus (2017) found leaders that utilized a transformational leadership style by acting as a champion and an advocate for the organization transformed the company through innovation. Lastly, when leaders had a transformational leadership style, much-needed innovation developed, assisting the business remain relevant to the customers (Shafie et al., 2014).

Employee innovation behavior was influenced by employee's support from management (Lukes & Stephan, 2017). Oldham and Cummings (1996), as cited in Lukes and Stephan (2017) defined, "Managerial support can be described as a perception that an employee's supervisor is supportive of new and innovative items" (p. 139). Lukes and Stephan (2017) further defined

managerial support as employee perceptions of financial rewards, implementation support, toleration of mistakes, and organizational support for new ideas. When there was support from leadership, employees were more successful in implementing product innovation (Omri, 2015).

Chapter 1 introduces the study by defining the background of the problem, followed by the problem statement, purpose, and significance of the study. Chapter 1 also includes the research design, research questions, assumptions and limitations, definitions of terms used in the study, and finally, concludes with a summary.

Background of the Problem

Innovation was a critical driver for setting businesses apart from the competition (Gruber, De Leon, George, & Thompson, 2015; Kuo-Chih, Tsung-Cheng, & Nien-Su, 2014; Markham, 2013; Weyrauch & Herstatt, 2016), which resulted in better financial growth for the company (Kuo-Chih et al., 2014). Innovation, in almost any capacity, was significant in advancing the business forward (Omri, 2015). Thoughtful innovation is aligned with and supports the vision, mission, and values of an organization. Thoughtful innovation then propelled businesses' goals and drove financial growth (Mayhew, Simonoff, Baumo, Selznick, & Vassalo, 2016).

Leadership was essential to innovation (Chang, 2016; Cheng, Song, & Li, 2017; García-Cruz, Real, & Roldán, 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia, Jimenez-Jimenez, & Sanz-Valle, 2017; Omri, 2015). Product innovation was essential to differentiate businesses from each other in the growing globalized competitive economy (Kuo-Chih et al., 2014). Leadership support made innovation the priority through supporting innovative ideas and creating a competitive edge in highly competitive industries (McAdam, 2005). Leadership involvement in critical decisions suggested increased job satisfaction, improved product innovation, and trust between leadership and employees (Kuo-Chih et al.,

2014). To be a successful leader, the leader must have unique skills and behaviors (García-Cruz et al., 2018), specifically the transformational leadership style. Successful innovations happened when transformational leadership was involved in innovation, providing a clear strategy and trustworthy guidance (Jung et al., 2003). Ultimately, employees were more successful in product innovation when there was support from leadership (Omri, 2015).

Product innovation does not happen without specific essential skills and behaviors (García-Cruz et al., 2018). García-Cruz et al. (2018) found that businesses achieved successful innovation when leaders used behaviors identified as organizational learning capability (OLC) when assisting the implementation of employee innovation. Leaders need essential skills to help move product innovation forward, such as problem-solving (Omri, 2015), motivation (Eggers & Kaul, 2018), and employee trust (Naranjo-Valencia et al., 2017).

Innovative behaviors were critical in both the employee and the leader to advance innovation (Omri, 2015). Lukes and Stephan (2017) measured innovative behavior through, “idea generation, idea search, and idea communication, implementation starting activities, involving others, and overcoming obstacles” (p. 136). Although innovative behaviors were critical to innovation, prioritization was also important.

Prioritizing time for research and development to create product innovation was challenging; however, Kentrus (2017) found when leaders supported innovation, leaders also supported putting forth the extra time and financial resources. Leaders would also be more likely to ensure the extra time was well spent through analysis to determine that the extra time needed for innovation generated revenue to an organization’s bottom line (Godart, Görg, & Hanley, 2017).

The study examined Burns's (1979) theory of transformational leadership and the relationship to Lukes and Stephan's (2017) theoretical framework of employee innovation behaviors for product innovation employees from U.S. product innovation companies with the potential mediation of managerial support. Transformational leadership theory has been heavily researched of the influence on various forms of successful innovation (Chang, 2016; Jung et al., 2003; Shafie et al., 2014). Transformational leadership was first defined by Burns (1979), describing a new leadership theory when engagement between people allows both leaders and followers to rise together.

The study combined two theoretical orientations, transformational leadership and Lukes and Stephan (2017) employee innovative behavior theoretical model. Lukes and Stephan's (2017) employee innovative behavior theoretical model was founded from two different instruments: "Innovative Behavior Inventory (IBI) and Innovation Support Inventory (ISI)" (p. 136). IBI and ISI were built from 20, "existing measures of employee innovative behavior" (Lukes & Stephan, 2017, p. 137), innovation support, and creativity. Lukes and Stephan (2017) identified the relationship between employee innovative behavior and managerial support. Several researchers have linked transformational leadership and innovative behaviors (Chang, 2016; Jung et al., 2003; Shafie et al., 2014). This study sought to understand if managerial support mediates the relationship.

Statement of the Problem

The research literature on innovation leadership indicated the importance of innovation in business (Gruber et al., 2015; Kuo-Chih et al., 2014; Weyrauch & Herstatt, 2016). Existing literature on innovation leadership also found the importance of skills and behaviors necessary to drive innovation (Eggers & Kaul, 2018; Markham, 2013; Naranjo-Valencia et al., 2017; Omri,

2015). However, the mechanism by which leadership style affected employee innovation behaviors was not clear.

The collective findings from existing literature led to the need for the study. The research found an increased need for product innovation in the globalized competitive economy (Kuo-Chih et al., 2014), and leadership support for innovation was essential (Omri, 2015). Research also already connected the transformational leadership style influenced different forms of innovation (Shafie et al., 2014), and essential skills and behaviors were needed in product innovation (García-Cruz et al., 2018). The study's goal was to explore the extent to which transformational leadership style affects employee innovation behaviors mediated by managerial innovation support.

Purpose of the Study

The purpose of the quantitative, nonexperimental explanatory research was to assess managerial support's mediating effect on the relationship between employee innovation behavior and transformational leadership style. Product innovation was defined as introducing or developing a new or improved product to the market (García-Cruz et al., 2018). The study's purpose will help leaders drive more innovation by understanding what increases employees' innovative behaviors. When employee innovation behaviors increased, the business was set apart from the competition, leading to more growth for the organization (Gruber et al., 2015; Kuo-Chih et al., 2014; Markham, 2013; Weyrauch & Herstatt, 2016).

Innovation was needed to be relevant in the marketplace (Shafie et al., 2014). Transformational leadership style (Burns, 1979) and managerial support (Lukes & Stephan, 2017) drove employees' innovation. With both transformational leadership style (Burns, 1979)

and managerial support (Lukes & Stephan, 2017) influencing employee innovative behavior, the study's purpose was to understand if managerial support acts as a mediator.

The study used the dependent variable of self-reported employee innovation behaviors (Lukes & Stephan, 2017). The participants were employees, recruited through a third-party, who create or modify a product. The third-party collected the data electronically. The independent variable was employee perceptions of the employee's direct leader's leadership style, assessing the current perceptions of the participant's direct leader's style (Bass & Avolio, 2004). The study analyzed the explanatory relationship between the employee's current managers' leadership style to the employee's innovation behavior and, ultimately, the mediating variable of employee perception of managerial support. The data were collected to assess the employee perceptions of the managerial, organizational, and cultural support for innovation. An analysis was conducted regarding a mediating relationship (Baron & Kenny, 1986).

Significance of the Study

The topic's significance was essential in the field of business, as research has shown innovation gives a business a competitive advantage (Kuo-Chih et al., 2014). The research found endlessly evolving innovation was an essential ingredient for company growth by meeting what existing and potential customers needed (Markham, 2013). The research examined the concepts of self-reported employee innovation behavior and the perception of the employee's direct leader transformational leadership style, mediated by managerial innovation support.

The study examined the level of influence that leadership style has on employee innovation behavior. The research provides insight into managerial support's mediating role, helping leaders understand the explanatory relationship on employee innovation behavior and clarifying what managers could do to influence innovation behavior. Much research (Gruber et

al., 2015; Kuo-Chih et al., 2014; Weyrauch & Herstatt, 2016) has proven the significance of innovation in business. However, little research existed on how to be a leader of innovators, the people behind the innovation. Studies explicitly addressing what the employees' perception of the leaders are was underdeveloped.

Research Questions

Based on the research problem, three main research questions guided the study.

RQ1. To what extent does transformational leadership style relate to employee innovation behavior?

RQ2. To what extent does managerial support relate to employee innovation behavior?

RQ3. To what extent does managerial support serve as a mediating variable between transformational leadership and employee innovation behavior?

The research questions addressed the independent variable (innovation behavior), dependent variable (transformational leadership style), and the mediating variable (managerial support). Managerial support was the mediating construct exploring the relationship role amongst innovation behavior and transformational leadership style.

Definition of Terms

The principal constructs in the study were as follows:

Employee innovation behavior. Behavior through which a new idea was generated or adopted, followed by implementation efforts initiated by the employee (Lukes & Stephan, 2017). Employee innovation behavior consisted of six key variables leading to innovation output: "idea generation, idea search, idea communication, implementation starting activities, involving others, and overcoming obstacles" (Lukes & Stephan, 2017, p. 136). The constructs omitted personality traits and concentrated on behaviors that contributed to the larger innovative concepts (Lukes & Stephan, 2017). The operational definition summarized all subscale questions for each of the six

variables, which made up one total average of the variable comprised of 3-4 questions, measured by a Likert scale of 1 to 5 (Lukes & Stephan, 2017).

Innovation managerial support. The perception of the employee's direct manager level of support for innovative and new items (Lukes & Stephan, 2017). Innovation managerial support was one of three components of the Innovation Support Inventory in which the employee self-reports how supportive the manager was for innovation (Lukes & Stephan, 2017). The operational definition was the average of the five questions, measured by a Likert scale of 1 to 5 (Lukes & Stephan, 2017).

Transformational leadership style. Engagement between people in a specific way that allowed leaders and followers to rise together. Leaders that rose with followers must engage with employees' motivations, wants, and needs (Burns, 1979). The transformational leadership style consisted of five variables, considered the "5 I's" (Avolio & Bass, 1990, p. 107). The five I's that contributed to transformational leadership style are: (a) idealized attributes, (b) idealized behaviors, (c) inspirational motivations, (d) intellectual stimulation, and (e) individual consideration (Avolio & Bass, 1990). The operational definition summarized the five variables making up the average of the variables comprised of four questions each, measured by a Likert scale of 0 to 4 (Bass & Avolio, 2004).

Research Design

The research design was quantitative and nonexperimental, using simple linear regression analysis to investigate whether there was a statistically significant explanatory relationship between the predictor and the outcome variables. Quantitative research allowed the analysis to be driven by data (Guo, 2014). Nonexperimental research fits best as there was no opportunity to run an experiment to answer the research question. Instead, there was only data gathered to

answer the research question (Creswell, 2014). Simple linear regression was used for the research, as the study was looking to model the explanatory relationship between the variables (Field, 2018) and then the potential mediating relationship (Judd & Kenny, 1981).

The step-by-step methodology:

1. A third-party collected the sampling population and recruits participants based on defined criteria. Next, the sampling population received the survey instruments.
2. Once the surveys were complete, data were reviewed to ensure the sample population met the requirements and ensured valid responses.
3. When the full data set was received, all questions were double-checked to ensure none were flip scale.
4. All collected responses in the nominal format were replaced with the appropriate Likert scale interval defined in the instrument (for example, the response 'fully disagree' was replaced with number '1').
5. Next, the IBM Statistical Package for the Social Sciences (SPSS) Version 26.0 was used to analyze the data using standard regression analysis. All assumptions were checked and tested the hypotheses and statistical significance.
6. Lastly, the Baron and Kenny (1986) process analysis was used for estimating simple mediation. Newsom (2018) summarized the mediation analysis in the following steps:
 - 6.1. Step 1 - Conducted a standard linear regression analysis investigating the relationship between transformational leadership and managerial support.
 - 6.2. Step 2 - Conducted a standard linear regression analysis investigating the relationship between managerial support and innovation behavior.
 - 6.3. Step 3 - Conducted a standard linear regression analysis investigating the relationship between transformational leadership and innovation behavior.
 - 6.4. Step 4 - Conducted a multiple regression analysis with transformational leadership and managerial support predicting innovation behavior.

Assumptions and Limitations

Assumptions

General methodological assumptions. The study philosophies of epistemological and ontological believe reality was measurable, objective, and quantifiable. Mediation analysis is

when one variable affected the other variable through a causal chain (Newsom, 2018), therefore there was a need to test the indirect pathway's significance in the study. The methodological assumption suggested using the quantitative deductive method, starting with the theoretical framework of transformational leadership (Burns, 1979), and the employee innovative behavior theoretical model (Lukes & Stephan, 2017).

Theoretical assumptions. The study assumed the multifactor leadership questionnaire (MLQ), a self-assessed instrument measuring transformational leadership (Avolio & Bass, 1990), was used to test the theory, the constructs from the theory, and measured the variables. The study also assumed Lukes and Stephan's (2017) employee innovative behavior theoretical model, founded from Innovative Behavior Inventory (IBI) and Innovation Support Inventory (ISI), accurately measured innovation behavior and managerial support.

Topic-specific assumptions. An assumption associated with the topic was the assumption of past research is accurate in the connection of transformational leadership to innovation behavior (Choi, Kim, Ullah, & Kang, 2016; Pieterse, Van Knippenberg, Schippers, & Stam, 2010; Shafie et al., 2014). Another assumption was that researchers were correct, that there was a relationship between managerial support and employee innovation behavior (Lukes & Stephan, 2017). Lukes and Stephan (2017) found reliability and showed factorial, criterion, convergent, and discriminant validity in both inventories, Innovation Behavior Inventory (IBI), and Innovation Support Inventory (ISI). However, both pilot studies, a third validation study, and a fourth cross-cultural study on validation were conducted in several European countries. Therefore, the study's assumption would work just as well in the United States (Lukes & Stephan, 2017).

Assumptions about measures. The basic assumptions associated with a simple linear regression analysis applied to the study: the linearity of residuals, outliers, homoscedasticity, normality, and observations were independent (Field, 2018). The basic assumption refers to when the researcher expects and anticipates the research results before the data is examined and found as truth (Field, 2018). The parametric assumption was the sample data were distributed normally, with continuous data, and the relationship between variables was linear.

The mediator analysis also had some assumptions about measures. Both Baron and Kenny (1986) and Judd and Kenny (1981) found underlying causal assumptions in the mediation analysis. The mediational model had two assumptions: there was no measurement error, and the dependent variable was not the cause of the mediator variable (Baron & Kenny, 1986). Another assumption of the study was that participants would read the consent form entirely and answer all questions truthfully. The security and privacy of participants' information were assumed to remain confidential from the third party gathering the information. The researcher would not knowingly participate in any activities causing bias or a conflict of interest affecting the results, and ethical conduct was a priority.

Limitations

Design limitations. The study's elements limiting power, validity, credibility, and capacity for generalization were limitations in the design. The study limits the design as data was gathered only at one point in time. Participants in the study contributed to design limitations with a risk of providing false answers and self-reporting perceptions, creating bias. The survey participants may have misinterpreted the questions and provided irrelevant answers leading to data validity issues. Participants may not have spent the time thoroughly reading the questions and providing the best option, which may have adversely affected the validity of the research.

Participants were limited to the population accessible by the third party, which did not include the entire population of product innovators.

Delimitations. The transactional leadership style often was considered in contrast to transformational leadership (Avolio, Bass, & Jung, 1999; Bass, 1990; Bryant, 2003; Pieterse et al., 2010). Numerous researchers have connected transformational leadership styles to more effective innovation (Choi et al., 2016; Pieterse et al., 2010; Shafie et al., 2014); therefore, the study concentrated on transformational rather than transactional leadership style. Another delimitation was the threat to external validity due to using a third-party, Qualtrics XM, to gather the sample, which narrowed the total pool of participants in the study (Qualtrics, 2019). Creswell (2014) defined a threat to external validity as an interaction of treatment and occurs due to participant selection being too narrow in characteristics.

Lukes and Stephan (2017) conducted two thorough pilot studies, a validation study, and a cross-cultural validation study in various European countries. A delimitation of the study is that it focused only on product innovators in America.

Finally, delimitations were connected to participant exclusion criteria set for the study. Participant exclusion criteria may be a delimitator by removing participants not born in the United States to help remove any differing cultural norms. Participants were also excluded if employed by not for profit or in the military. Lastly, the study excluded product innovators who were single owners and single employee entrepreneurs because the participants did not have a direct leader. However, an entrepreneur could have mentors or board of directors behaving like leaders.

Organization of the Remainder of the Study

In summary, an overview of the study has been provided. The introduction included the background of the problem, statement of the problem, purpose, and significance of the study. In addition, the research questions, definitions of terms, assumptions, and limitations were presented. The research sample population involved employees who create product innovation and have a direct manager. The study used a quantitative nonexperimental explanatory design to collect, measure, and examine anonymous participants' obtained data.

The remainder of the research includes a Chapter 2 literature review, a discussion of the methods for searching for research, theoretical orientation of the study, a review of the literature, a synthesis of research findings, a critique of previous research methods, and concludes with a summary of the chapter. Chapter 3 further explains the study's purpose, research questions and hypotheses, research design, target population and sample, procedure, instruments, and ethical considerations. Chapter 4 provides the sample description and hypothesis testing. Chapter 5 includes a summary, discussion, and conclusion based on the results. Chapter 5 also describes limitations and implications for practice. The chapter concludes with recommendations for further research.

CHAPTER 2. LITERATURE REVIEW

Chapter 2 will discuss the methods for searching for research, theoretical orientation of the study, a review of the literature, synthesis of research findings, a critique of previous research methods, and ends with a summary of the chapter.

Methods of Searching

Several methods were used to perform the literature review searches. The first process was to leverage the Capella library, utilizing Summon and searched for *innovation* and *leadership*, scanning articles of interest. Next, the A-Z databases were filtered by the subject *business* utilizing the same keywords, *innovation*, and *leadership*. Once the library guides by Capella College and specialization were shared, general management, leadership, innovation, and strategy were researched.

The Capella library guide led to discovering the *Journal of Product Innovation Management* and *The Leadership Quarterly*. The last two years, 2018 and 2019, of publications were reviewed to analyze the most critical topics in the field of study and read articles connected to innovation's topical area. The following keywords were used in the literature review to obtain existing research: innovation, product innovation, leadership, transformational leadership, leadership style, management, management support, innovation behavior, employee leader perception, innovation leader, innovation manager, and innovation skills.

Bibliography mining was also used to explore the literature behind the articles of research yielding seminal pieces. Cited reference searching helped find additional articles connecting the study to the research problem. The new research articles were then looked up in the Ulrichsweb database from Capella A-Z databases to validate the publication was a peer-reviewed journal.

The Capella University Microsoft Excel Version 16.37 research log was used to track articles of interest and connected to the research. The research log was modified by adding and identifying the year of publication, confirming the article was peer-reviewed, determining what type of article it was, identifying which theory or model the article supported, reviewing the research method, and examining pieces of the article connected to the streams of research. As the research progressed and the funnel of research narrowed, the research log was split into research connected to the topic and research reviewed but removed due to no longer connecting to the topic.

Theoretical Orientation for the Study

The study wove two theoretical orientations, transformational leadership and Lukes and Stephan (2017) employee innovative behavior theoretical model. Transformational leadership was not a new concept for leaders; Burns (1979) was one of the first to define transformational leadership over 40 years ago. Burns (1979) described transformational leadership as the engagement between people allowing both leaders and followers to rise together. Transformational leadership style was essential for leaders to engage with employees' motivations, wants, and needs (Burns, 1979).

Bass (1985, 1990) and later Avolio joined Bass (Avolio & Bass, 1990; Bass & Avolio, 1990, 1995, 1997, 2004) continued to significantly build upon Burns's (1979) transformational leadership theory. Bass and Avolio (1990, 1995, 1997, 2004) built and revised the measurement through the multifactor leadership questionnaire (MLQ), a self-assessed instrument, a manual (Avolio & Bass, 1990), and a rater form to be completed by others about the person who took the self-assessment. The research used the rater form, as the study was looking to gather the employee's perception of the direct leader's style. The multifactor leadership questionnaire

(MLQ) gathers questions to assess multiple leadership styles, transformational, transactional, and passive avoidant leadership styles (Bass & Avolio, 2004).

The transformational leadership style contrasts with transactional leadership (Avolio et al., 1999; Bass, 1990; Bryant, 2003; Pieterse et al., 2010). Bass (1990) defines transformational leaders' characteristics as setting the vision, instilling pride, developing high expectations to promote rationality, careful problem solving, and treating each employee individually. Whereas transactional leaders' characteristics utilized legitimate power, providing rewards in exchange for effort, taking corrective actions when rules and standards deviate, intervening when standards decline and, avoiding making decisions (Bass, 1990; Ismail, Mohamed, Sulaiman, Mohamad, & Yusuf, 2011). Numerous researchers have connected transformational leadership styles to more effective innovation (Choi et al., 2016; Pieterse et al., 2010; Shafie et al., 2014); therefore, the study focused on transformational leadership.

The second theoretical orientation was Lukes and Stephan's (2017) employee innovative behavior theoretical model was founded from two different instruments: "Innovative Behavior Inventory (IBI) and Innovation Support Inventory (ISI)" (p. 136). Lukes and Stephan (2017) developed the model to theorize employee innovative behavior as different from innovation outputs. Lukes and Stephan's (2017) identified the difference between employee innovative acts and expanded to defining multifaceted innovative behaviors.

Lukes and Stephan (2017) found an organization's micro foundations was intrapreneurship driven by innovative employee behaviors. Intrapreneurship is innovation within a larger organization (Lukes & Stephan, 2017). Lukes and Stephan (2017) defined employee innovative behavior as, "behaviors through which employees generate or adopt new ideas and make subsequent efforts to implement them" (p. 137). Lukes and Stephan (2017) intentionally

ignored personality traits, such as risk taking, when exploring employees' innovative behaviors were focused on behaviors.

Lukes and Stephan (2017) found three threads of past research that influenced employee innovative behavior, which made up the Innovation Support Inventory (ISI): managerial support, organizational support, and cultural support. However, Lukes and Stephan's (2017) research found only managerial support directly related to employee innovative behavior. Lukes and Stephan (2017) used Oldham and Cummings's (1996) definition of managerial support, "a perception that an employee's supervisor is supportive of new innovative ideas" (p. 139). The two different instruments Lukes and Stephan (2017) developed, "Building from a review of existing employee innovative behavior scales and theoretical considerations we develop and validate the Innovative Behavior Inventory (IBI) and the Innovation Support Inventory (ISI)" (p. 136). The instruments were built from 20 "existing measures of employee innovative behavior" (Lukes & Stephan, 2017, p. 137) innovation support and creativity. The review of existing measures also identified gaps in research of innovative behaviors not defined until Lukes and Stephan's research (2017).

The study expanded existing research by providing insight to leaders regarding how product innovators behaved and explored how these behaviors relate to employee perceptions of the employee's direct leader's leadership styles. The study attempted to connect transformational leadership theory to leadership styles impacting innovation behaviors (Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). The study assessed how leadership styles affected employee innovation behaviors and analyzed the potential of managerial innovation support as a mediator between transformational leadership and employee innovative behavior. Successful product innovation

was defined as creating a new product or modifying an existing one, effectively implementing, meeting, or exceeding the product innovation success measurement (Lukes & Stephan, 2017).

The research contributed to the transformational leadership theory by building upon existing research on the connection of transformational leadership and various forms of innovation and attempted to clarify the mechanism by which managerial support encouraged employee innovation behavior. Existing research supported the importance of transformational leadership in innovation (Chang, 2016; Jung et al., 2003; Shafie et al., 2014) but did not discuss the effect on employee innovation behaviors and the potential mediating variable of innovation managerial support to which the research builds upon.

The study wove the existing theoretical framework of transformational leadership and Lukes and Stephan's (2017) employee innovative behavior theoretical model (Figure 1). The study's research hypothesis connects transformational leadership theory and expanded scientific knowledge through employee perception of the direct manager leadership style and the effect on the employee's product innovation behavior by evaluating the possible mediating role of managerial support. The study tested the framework by using quantitative research to validate whether transformational leadership did, or did not, contribute to successful employee innovation behavior and explored managerial support as the mechanism to realize the possible effect.

Transformational leadership and Lukes and Stephan's (2017) employee innovative behavior model were the study's conceptual foundation. First, leadership was essential to innovation research to show the importance of innovation (Shafie et al., 2014). Shafie et al. (2014) found a connection between innovation and transformational leadership and the information needed for product innovation implementation. Second, transformational leadership was associated with skills necessary to drive innovation, as Kentrus (2017) discussed when

researching champions (leaders) and the skills needed for transformational leadership. Lastly, the importance of an innovative approach to business is connected to transformational leadership, as Shafie et al. (2014) discussed, stating the significance of innovation needed to stay relevant to customers.

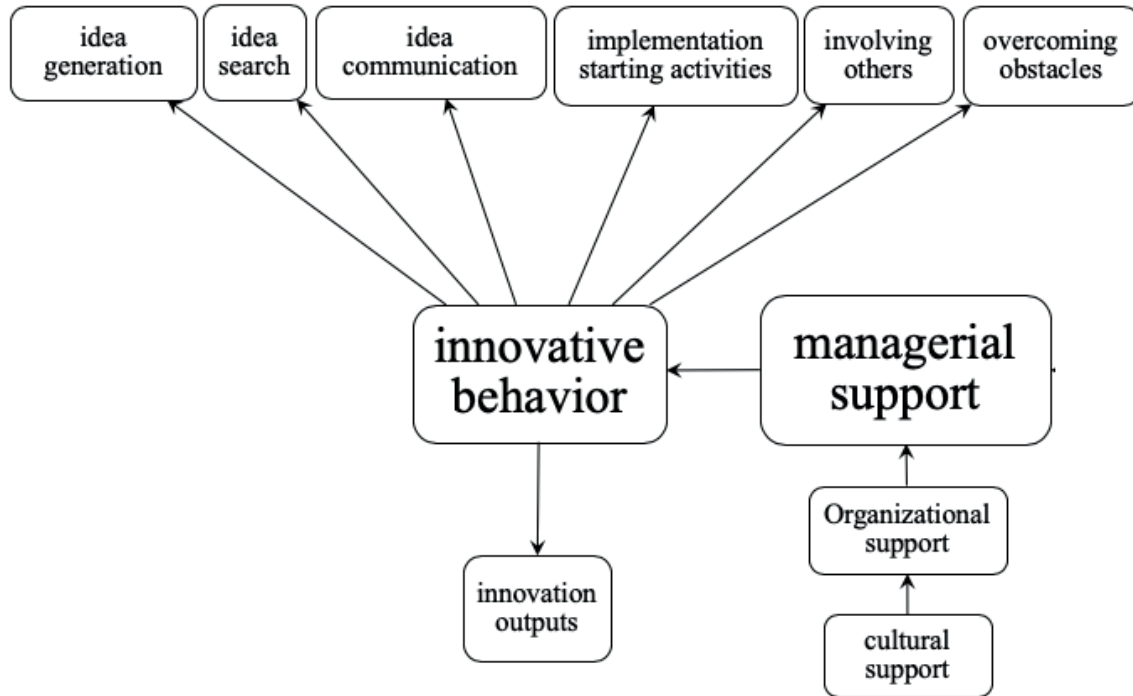


Figure 1. Lukes and Stephan’s (2017) employee innovative behavior theoretical model, one of two theoretical orientations in the study. From “Measuring employee innovation,” by M. Lukes and U. Stephan, 2017, *International Journal of Entrepreneurial Behaviour & Research*, 23(1), p. 147. Copyright 2017 by the Emerald Publishing. Reprinted with permission.

Review of the Literature

After the existing literature was reviewed, three threads surfaced: the importance of innovation to business (Gruber et al., 2015; Kuo-Chih et al., 2014; Markham, 2013; Weyrauch & Herstatt, 2016), leadership was essential to innovation (Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Naranjo-Valencia et al., 2017; Omri, 2015), and skills and

behaviors were necessary to drive innovation (Eggers & Kaul, 2018; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). However, existing research did not address the mechanism by which leadership styles affected employee innovation behaviors.

The topic of an examination of managerial support mediated between transformational leadership and innovation behavior was essential in business since research found innovation gave business the competitive advantage (Kuo-Chih et al., 2014). Research also found continuous innovation was an essential ingredient for company growth by meeting the needs of existing and potential customers (Cui & Wu, 2018; Markham, 2013). The importance of innovation to business meant if businesses did not prioritize innovation, then the businesses' longevity will not succeed (Markham, 2013). The research studied employee innovation behavior and the perception of the transformational leadership style of employee's direct leader with a target population of employees who create product innovation.

The literature review will walk through the key research that led to the study: the importance of innovation to business, the essential role leadership plays in innovation, the skills and behaviors necessary to drive innovation, the fit of transformational leadership style to innovation, and how the streams of research led to the variables of employee innovation behavior, transformational leadership style, and managerial innovation support. The study then connected transformational leadership theory to the constructs of employee innovation behavior, transformational leadership style, and managerial innovation support.

Importance of Innovation to Business

Innovation was one of the most critical drivers for business (Baker, Grinstein, & Harmancioglu, 2016; Hartley & Rashman, 2018; Lukes & Stephan, 2017). Over time, businesses have had to change the company's innovation strategy from employees who imitated the

competition and customer needs to employees who innovated to stay ahead of the competition (Hartley & Rashman, 2018). García-Cruz et al. (2018) described product innovation as a new or improved product. Not all or just any innovation applied to business means sales and profits rose, but well thought out innovation aligned with and supports the vision, mission, and values, and supports the business's goals (Mayhew et al., 2016).

Successful product innovation is creating a new product or modifying an existing product, effectively implementing the product innovation, and meeting or exceeding the product innovation success measurement (Lukes & Stephan, 2017; Nijssen, Hillebrand, Vermeulen, & Kemp, 2006; Visnjic, Wiengarten, & Neely, 2016). Attributes of innovation have been defined through a meta analysis by Tornatzky and Klein (1982). Through the meta analysis, the following 10 attributes were identified; “1) compatibility, 2) relative advantage, 3) complexity, 4) cost, 5) communicability, 6) divisibility, 7) profitability, 8) social approval, 9) trialability, and 10) observability” (Tornatzky & Klein, 1982, p. 33). Innovation attributes were critical to support innovation in business and what the business teams needed to consider when innovating.

According to some researchers, the most critical driver for setting a business apart in the industry was innovation (Bock, Eisengerich, Sharapov, & George, 2015; Crossan & Apaydin, 2010; Markham, 2013; Mayhew et al., 2016; Weyrauch & Herstatt, 2016), and naturally resulted in better growth for a company (Anning-Dorson, 2017; Bock et al., 2015). There were many reasons innovation was important to a business. Bowonder, Dambal, Kumar, and Shirodkar (2010) found innovation was exciting to customers, setting a business apart from the competition and helped businesses expand the product portfolio. Product innovators often forgot to engage the customer, but Anning-Dorson, (2017) found when customers were engaged, the demand

showed a positive relationship with innovation. Innovation, in almost any capacity, was significant in driving the business forward.

Crossan and Apaydin (2010) explored peer review research to understand better the importance innovation had on business. Understanding how and why innovation was vital to business led to Crossan and Apaydin (2010) synthesizing research perspectives to provide a framework, an innovation process to help businesses be set apart from the competition. The framework helps businesses drive innovation by having a clear structure by “connecting three meta constructs of innovation determinants – Leadership, Managerial Levers, and Business Processes – and viewing Innovation as a Process and an Outcome” (Crossan & Apaydin, 2010, p. 1176).

Research supported the importance of innovation in industry (Bock et al., 2015; Bowonder et al., 2010; Markham, 2013; Mayhew et al., 2016; Weyrauch, & Herstatt, 2016). An innovative approach was vital for business. Endless evolving innovation was an essential ingredient for safeguarding the company by meeting what the existing and potential customers desire (Bock et al., 2015). The statement alone may not surprise most, but often innovation was overlooked in workers’ day to day workload as employees were bombarded with emergencies and new priorities land on their plate.

Innovation was essential (Bock et al., 2015; Markham, 2013; Mayhew et al., 2016; Weyrauch & Herstatt, 2016), but how some organizations become more apt to innovate and who influences innovation were the initial questions supporting a need for future research. Innovative organizations, by modifying or bringing new products or services to the customers, were the company’s continuing to be most profitable (Kuo-Chih et al., 2014). New products launches

become especially essential in the globalized market which led to organizational innovation (Kuo-Chih et al., 2014).

Innovation impacted and influenced businesses in various capacities, such as new or improved products, services, processes, or strategies, all of which were not created equal. The two types of innovation discussed most in research were product innovation and service innovation (Nijssen et al., 2006). Nijssen et al. (2006) worked to identify similarities of product and service innovations impacts on business and the differences between them. Therefore, the study focused on product innovation, specifically.

Small businesses often ended up with only one great innovation, as businesses find delivering continuous innovations hard to accomplish (Baker et al., 2016). Baker et al. (2016) believed the largest challenge to business was continuously innovating while also ensuring the company has proper growth to survive. When innovation worked, then the business was profitable. However, businesses need to be willing to take a risk and understand not all innovation will be successful (Baker et al., 2016). Once there was one successful innovation, businesses cannot stop and be complacent.

Innovation was essential to business. New and improved product innovation was vital to business and drives more profit (Markham, 2013). Markham (2013) found businesses saw higher profits and more significant revenue from new products versus improved products. Also, businesses performed the strongest when skilled at new product innovation (Markham, 2013). Innovation did not happen without the people behind the creation of innovation, both leaders and employees.

Leadership Essential to Innovation

Leaders were critical influencers to employee innovative behaviors (Hammond, Neff, Farr, Schwall, & Zhao, 2011). To move product innovation ideas forward, employees needed a direct leader to provide a foundation and support (Holten & Brenner, 2015; Omri, 2015). A wealth of research supported leadership being essential to innovation (Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015; Rosing, Frese, & Bausch, 2011). Scott and Bruce (1994) conducted an empirical study validating the evidence of innovation support directly impacting innovative outcomes. A summary of such research suggested leaders need to prioritize innovation, protect innovation and be an advocate for innovation (Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015).

Prioritize innovation. Leaders needed to prioritize innovation to ensure innovation was treated as necessary (Kuo-Chih et al., 2014). Kuo-Chih et al. (2014) discussed due to globalization and increased innovation across the world, businesses needed to prioritize product innovation to stay competitive. Specifically, when leadership was involved in innovation, by providing a clear, prioritized strategy and support, innovation results were more strategic and successful (Jung et al., 2003). Hammond et al. (2011) found a positive relationship between employee innovation and complex jobs having innovation as part of the job description through clear role expectations. Therefore, research suggested if leaders prioritize innovation by ensuring innovation was part of the individual roles, employees will be more innovative (Hammond et al., 2011).

Scott and Bruce (1994) also found leaders who provided clear role expectations have employees with increased innovative behavior. Research has found even if an employee has a

perception innovation was part of the job, they will be more innovative (Scott & Bruce, 1994). Innovation had risks and often pushed some employee's out of their comfort zone. If employees were supported to innovate, with leaders who prioritized innovation, there was a positive relationship with employee innovation (Hammond et al., 2011).

Prioritizing innovation also impacted implementation (Tornatzky & Klein, 1982). If leadership makes innovation a priority, innovation then drives the implementation of new ideas (McAdam, 2005). Therefore, the new ideas, in turn, create a competitive edge in a highly competitive industry (McAdam, 2005), and led to stronger sales, all due to leaders prioritizing innovation. Lukes and Stephan (2017) also found managers who prioritized innovation led to stronger implementation. Leaders who supported the employee in implementing good ideas as soon as possible, with a sense of urgency, drove higher employee innovation behavior (Lukes & Stephan, 2017) and encouraged leaders to protect innovation.

If leaders prioritized innovation, innovation then needed to be protected. When business declines or innovation was not working as initially planned, leaders need to protect innovation by ensuring the company does not give up on the innovation priority (Godart et al., 2017). Product innovation was protected when leaders highlighted the importance and value of the team. Trust based work (TBW) was adaptable, and employees manage to allow maximum flexibility (Godart et al., 2017). Godart et al. (2017) found leaders who prioritized and supported TBW hours tend to be more likely to improve products, prioritize, and have higher employee engagement in innovation versus leaders who do not support TBW.

Protect innovation. Leaders needed to protect innovation adequately. Without leadership to drive and protect innovation, innovation was quickly forgotten (Felekoglu & Moultrie, 2014). Bowonder et al. (2010) found innovative ideas often got stuck in the research and development

stage; therefore, by protecting innovation, leaders can help ensure the ideas moved forward. Leaders worked with employees to set goals, guaranteeing accountability to protect and move innovative ideas forward.

The protection of innovative ideas came at all stages of the innovation process, and not all innovations executed correctly; therefore, leaders needed to protect and embrace mistakes (Lukes & Stephan, 2017). Lukes and Stephan (2017) found managers who were tolerant of mistakes and errors during the implementation of something new drove the employee's higher innovation behavior. Even with innovation driving successful business, new ideas and innovation were often resisted in the industry as change was hard for most people (Rosing et al., 2011). Rosing et al. (2011) found leaders needed to work with the organization to overcome resistance and protect innovative new ideas. Overcoming resistance of new ideas happened when leaders used exploration and exploitation, coined as ambidextrous leadership, not only in the implementation stage but also in the creative stage of innovation (Rosing et al., 2011).

Innovative ideas needed to be protected during vulnerable stages in the product development process. Creativity was the first stage of innovation. The creativity stage was the stage one may think was the least vulnerable; however, the creativity stage also needs to be protected as the creativity stage was often where the most innovative ideas were generated (Bissola, Imperatori, & Colonel, 2014). When leaders did not protect innovation, innovative ideas were quickly squashed, leading to the employee feeling more discouraged to keep innovating (Felekoglu & Moultrie, 2014). Leaders needed to identify and protect innovation, so others do not stop or block concepts moving the company forward.

Protecting innovative ideas during vulnerable stages throughout the product development process was vital. Leaders needed to protect innovation if the leaders wanted the team to pursue

product innovation (Godart et al., 2017). Leaders who prioritized and protected innovation were essential, but innovation advocacy was also critical in driving strong business.

Advocate for innovation. Once the innovation was prioritized and protected, leaders needed to advocate for innovation, meaning publicly support and serve as a champion throughout the company on the importance of innovation (Felekoglu & Moultrie, 2014). Innovation can happen within any pillar of an organization. Innovation was not limited to just research and development (R & D); having leadership support makes innovation the priority within any organization's pillar, ultimately driving advocacy of implementation of new or improved products (Felekoglu & Moultrie, 2014).

Leadership involvement in critical decisions, including advocating and communicating improved product innovation, resulted in increased job satisfaction and trust between leadership and employees (Kuo-Chih et al., 2014). When leaders advocate for innovation by supporting innovation processes, employees see support and trust by leadership (Bowonder et al., 2010). When leaders showed the innovation, work was important to the company, employee motivation increased (Bowonder et al., 2010).

A leader who was an advocate for innovation was a cheerleader for teams. Employees successfully innovated products when there was support for innovation from leadership compared to when leadership was not supportive (Omri, 2015). Managers also needed to support employee proposals within the department and outside of the department (Lukes & Stephan, 2017). Innovative behaviors were essential in both the employee and the leader (Omri, 2015).

Leaders often found innovation resistance and found more success when the leaders advocated for innovation (Heidenreich & Kraemer, 2016). Naturally, companies wanted to gain a return on the investment made when innovations launch (Heidenreich & Kraemer, 2016).

Various executives are wary of statistics of 80% or higher failure rates and were resistant to innovation, working through the potential of lack of profitability (Castellion & Markham, 2013). However, research found only 40% of innovations that made it to market, ended up failing financially (Castellion & Markham, 2013). Therefore, leaders needed to advocate for innovation by building the possible failure rate into the financial model to account for the return on the investment and help avoid innovation resistance (Heidenreich & Kraemer, 2016).

Managerial support for innovation was the perception of innovative products' advocacy from the employee's direct manager (Lukes & Stephan, 2017). Lukes and Stephan (2017) found a positive correlation between employee innovation behaviors and innovation managerial support. The connecting Lukes and Stephan (2017) found between innovation behaviors and managerial support validated the importance of leadership advocacy for innovation.

Hulme, Thomas, and DeLaRosby (2014) discussed a deep need for more innovative leaders to advocate and shift America to a creative culture direction. Hulme et al. (2014) suggest the importance of innovation in America as the country moves from an information culture to a creative culture, but leaders needed to step up and advocate for innovation. Leadership was needed to advocate for innovation to move the business and the country forward (Hulme et al., 2014).

Leadership was not the only component of innovation, but leadership was critical to success, ultimately increased sales and market share against the competition (Shafie et al., 2014). Leaders needed to protect innovation, prioritize innovation, and advocate for innovation to make innovation happen. Leadership was not the only factor in successful innovation, but research validated leadership was needed to succeed (Cheng et al., 2017; García-Cruz et al., 2018; Kuo-

Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015; Rosing et al., 2011).

Skills and Behaviors Necessary to Drive Innovation

One can have excellent, innovative ideas with leadership support, but if the idea was never developed or produced, then the idea was just an idea (McAdam, 2005). Creating innovation required specific skills and behaviors to develop and deliver on an idea and bring the idea to implementation (Qiang, Maggitti, Smith, Tesluk, & Katila, 2013). Skills and behaviors developed in many ways, such as acquired on the job, learned from a social circle of friends or family, or developed in formal education, such as higher education (Luke, 2013).

Specific skills and behaviors were essential in product innovation (Eggers & Kaul, 2018; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). Leaders and employees at all levels needed skills to drive innovation. A study from Luke (2013) worked to define “innovation literacy, which is research, development, problem solving, leadership and entrepreneurial skills, along with the ability to recognize innovation in work contexts” (p. 38). Leaders and practitioners needed innovation literacy to drive innovation implementation.

The idea to create great innovative products did not come from just the leaders or just the employees. The innovation came from a combination of both leaders and employees, often considered the team (Bissola et al., 2014). Bissola et al. (2014) found that if an individual was assessed as creative, creativity correlated to others the individual worked with and led to more creativity, almost thought of being contagious, which proved not all people touching innovation have to be creative. However, the skills and behaviors needed were slightly different between the leader and the employee.

Leader skills. Leaders needed essential skills to help move product innovation forward (García-Cruz et al., 2018; Omri, 2015). Leaders however needed a different set of skills than employees. Researchers have studied leadership skills needed for innovation for years and have found many skills were needed; such as organizational learning capability (García-Cruz et al., 2018), problem-solving (Omri, 2015), motivation (Bissola et al., 2014; Eggers & Kaul, 2018; Hammond et al., 2011; Lukes & Stephan, 2017), search skills (Qiang et al., 2013), and trust (Naranjo-Valencia et al., 2017; Zhong, 2018).

Specific leadership skills drove the organization's learning process and product innovation (Crockett, McGee, & Payne, 2013; García-Cruz et al., 2018; Heidenreich & Kraemer, 2016). Organizational and managerial characteristics such as new ways of problem solving and facilitation of product innovation, also known as organizational learning capability (OLC) was first defined by García-Cruz et al. (2018). García-Cruz et al. (2018) discovered leaders who use OLC when assisting employee innovation implementation led to greater innovation success. Organizational learning capability (OLC) facilitated the process of organizational learning and product innovation (García-Cruz et al., 2018) and was just one example of skills leaders needed to have to drive product innovation.

Crockett et al. (2013) also found leaders needed specific skills to lead innovation. Most importantly, Crockett et al. (2013) found that many companies had leaders who lacked the skill set needed for innovation, which led the company to lower profitability. However, most skills can be taught to leaders if leaders desire to learn (Crockett et al., 2013).

Innovation skills were necessary at all levels of the organization, chief executive officer (CEO), middle management, and employees. One essential skill a leader at any level needed to move product innovation forward was problem solving (Omri, 2015). Omri (2015) found firms

who had managers committed to creative problem solving enjoyed successful performance and growth, which ultimately increased self and employee motivation.

Motivation was also an essential leadership skill driving innovation (Eggers & Kaul, 2018; Lukes & Stephan, 2017). Motivation from leaders happened at both the employee level as well as leaders' peers and executive leadership (Heidenreich & Kraemer, 2016). Hammond et al. (2011) validated innovation had a direct relationship to both intrinsic and extrinsic motivation. Intrinsic motivation comes from within an employee or leader, where extrinsic motivation was outside forces motivating an employee, most often from leaders (Hammond et al., 2011). Lukes and Stephan (2017) found both managers who motivated the employees to come to them with new ideas and those who financially rewarded good ideas drove more employee innovation behavior.

Eggers and Kaul (2018) confirmed the importance of leadership skills necessary for innovation. Specifically, Eggers and Kaul (2018) found leaders needed to motivate the team to innovate even when prior performance was strong as the employee feared cannibalization of past success, which impacted trust. Often when an employee has strong prior performance, leaders forget the employee still needed encouragement and support to keep up the strong performance (Eggers & Kaul, 2018).

Leaders needed to motivate peers to drive innovation. Naturally, not all innovative new products were successful (Castellion & Markham, 2013). Therefore, leaders needed to motivate others in the organization to reduce innovation resistance (Heidenreich & Kraemer, 2016). Marketing peers needed to be motivated when product launched to help tell why the customer wanted an innovative product (Heidenreich & Kraemer, 2016). Executive leadership also needed

to be motivated to help understand the investment return and help understand the failure rate may be expected (Castellion & Markham, 2013).

Leaders also needed to build the skill of proper searching for new information and knowledge in product introductions (Qiang et al., 2013). Qiang et al. (2013) confirmed previous research; search skills were needed to drive successful innovation. One of the skills was “search, the controlled and proactive process of attending to, examining, and evaluating new knowledge and information” (Qiang et al., 2013, p. 893). Qiang et al. (2013) found a direct correlation to proper search and customer satisfaction of the innovation.

Building on the skill of proper searching, as one searches, was the importance of gaining the customer’s perspective and broader external networks when thinking about innovation (Baker et al., 2016). Cui and Wu (2018) found inconsistent engagement and partnership with the customer prohibited developing innovations. However, what should not be forgotten was to focus on existing and potential customers (Crockett et al., 2013). Utilizing customer insight while searching could open employees who create product innovations to potentially different ways of solving the problem and get excellent customer satisfaction (Cui & Wu, 2018).

Building trust was also an important skill. Leaders also need to have the skill of building trust and trusting employees to move innovation forward with the goal of creating a supportive organizational culture (Naranjo-Valencia et al., 2017). Research supports leadership as crucial to innovation, but to be a successful leader, a leader must have the ability to build trust with employees (García-Cruz et al., 2018). However, there were components of trust to drive innovation.

Trust was a larger umbrella and skills leaders needed for innovation. Within trust, research tied knowledge sharing (Bissola et al., 2014) as well as transparency (Zhong, 2018)

needed to drive trust in innovation. Trust was developed and showcased in various leadership skills, such as the importance to trust in the process of knowledge sharing process (Bissola et al., 2014). A leader must be able to trust an employee or teams to provide proper knowledge sharing to drive innovation (Bissola et al., 2014). Transparent leaders were also critical in driving innovation but in order for leaders to be transparent, leaders needed to trust the employees (Zhong, 2018). Trust was essential on both sides of the process; the leader and employee sides.

Employee skills. Employees also need multiple skills to drive innovation forward (Felekoglu & Moultrie, 2014; Luke, 2013; Lukes & Stephan, 2017; Qiang et al., 2013). Employee skills needed for innovation are different than skills leaders needed. There were several skills employees needed, such as innovation literacy (Luke, 2013), idea generation (Lukes & Stephan, 2017), communication (Felekoglu & Moultrie, 2014), and the ability to “search” (Qiang et al., 2013) in order to move product innovation forward.

Ideally, practitioners built and grew necessary innovation skills such as problem solving, throughout school, before entering the workforce. Luke (2013) found one outcome of a polytechnic school was the schools trained students in terms of the skills and quality of work the industry needed. Luke (2013) discussed the importance of innovation literacy for practitioners, which included the skill of researching historical and competitive data, problem solving customer needs, providing leadership amongst peers, and honing entrepreneurial skills such as self-motivation. However, employees needed refreshers, mentoring, and guidance to tap into existing or new skills in order to drive innovation.

The ability to try new ways and approaches, along with seeking and preferring original thinking and problem solving skills, were all connected to broader idea generation (Lukes & Stephan, 2017). When a practitioner utilized problem solving skills when an issue with a product

arose, the practitioner had the desire to solve the problem and often preferred original thinking for solutions (Lukes & Stephan, 2017). Problem solving worked best when a practitioner was in an environment of trust and a culture of innovation support (Lukes & Stephan, 2017).

Communication skills were essential in all organizations, all levels, all roles, and all people, however, communication skills were critical when approaching product innovation (Lukes & Stephan, 2017). When a practitioner had an idea to drive the business forward, the need must be communicated to prioritize and gain support for the idea (Felekoglu & Moultrie, 2014). Communication skills were critical at all stages of the innovation process as various issues and concerns arose, the employees needed to have the courage to communicate the concerns (Felekoglu & Moultrie, 2014).

Another communication skill was the importance of gaining external network support, including the customers perspective when thinking about innovation (Baker et al., 2016). Baker et al. (2016) found the importance of external networks to innovation, in addition to communicating with customers as well as suppliers and business partners as critical to innovation. Cui and Wu (2018) found a deep need for businesses to engage and partner with the customer when innovating. Communicating to the customer in conjunction with listening objectively opened innovators to potentially different ways to solving the problem (Cui & Wu, 2018).

Lastly, Qiang et al. (2013) identified one innovation skill as the ability and importance to “search” at both the leader and employee level. “Search” was defined as the proactive position in discovering new ideas with a critical eye. Providing innovators with the ability to leverage the search skill helped drive innovation (Qiang et al., 2013). Search skill was needed at all stages of

the innovation process, having a critical eye on innovation helped reduce errors or unforeseen costs (Qiang et al., 2013)

Throughout one's life, one uses innovation skills, in tenured positions, entry level positions, or in higher education. Innovation can also happens in all industries and in nearly all roles within an organization. Research was not clear what the magic sets of skills were needed to drive innovation, but clearly certain skills were required to drive innovation and growth for the company (Felekoglu & Moultrie, 2014; Luke, 2013; Lukes & Stephan, 2017; Qiang et al., 2013).

Employee innovative behaviors. Employee innovative skills are clear and heavily researched however employee innovative behaviors was a newer research topic. Employee innovative behavior research is mainly from recent years. Employee innovative behaviors have been discussed with a direct correlation to transformational leadership style however empirical evidence was sparse in peer reviewed literature (Pieterse et al., 2010).

Recent research have identified several critical employee innovative behaviors (Andika & Xia, 2019; Lukes & Stephan, 2017; Naranjo-Valencia et al., 2017; Omri, 2015; Pieterse et al., 2010; Stock, 2011, 2015). Behaviors can be thought of the “what” was needed and skills as the “how” something was done. Andika and Xia (2019) confirmed many factors affected employee innovation behavior, such as motivation, transformational leadership, job satisfaction, competence, knowledge management, and compensation. However, the employee innovation behaviors with the highest relationship was extrinsic motivation and compensation (Andika & Xia, 2019).

Stock (2015) found similar behaviors, and also, included the influence of leadership regarding how employees showed innovative behaviors. However, Stock (2015) focused on the critical component of employee burn out negatively influenced employee innovation behavior.

Stock (2015) felt leaders must not only look at what employee innovation behaviors were important but also, what caused a negative effect as well.

Naranjo-Valencia et al. (2017) validated the significance of innovative employee behaviors and the influence on innovation, focused specifically on the general assumption the organizational culture can be used as a stimulant to foster employee innovation behavior.

Pieterse et al. (2010) and Omri (2015) supported if organizations want to survive, then innovative behavior needs to increase. Pieterse et al. (2010) and Omri (2015) found similar research on innovative behaviors, connected employee motivation to multi stage problem recognition and idea generation, creating support for ideas, creativity, and idea implementation. Pieterse et al. (2010) research added to body of knowledge by finding employee innovative behaviors positively related to transformational leadership with employee empowerment was high.

When researchers work to understand employee innovation behavior, researchers were ultimately looking to understand Intrapreneurship (Lukes & Stephan, 2017). Intrapreneurship was when an employee innovates, like an entrepreneur, but within an existing larger organization (Lukes & Stephan, 2017). Intrapreneurship can be defined at the individual level or team level, but the innovative behaviors were similar at both levels (Lukes & Stephan, 2017).

Not only was research light on the employee innovative behavior topic, very little work to actually measure employee innovation behavior existed, Lukes and Stephan (2017) worked to change this. Lukes and Stephan (2017) reviewed and built on existing employee innovative behavior instruments and created the multidimensional, cross cultural validity of the Innovation Behavior Instrument used in the study. Lukes and Stephan (2017) defined employee innovation

behaviors as, “idea generation, idea search, idea communication, implementation starting activities, involving others and overcoming obstacles” (Lukes & Stephan, 2017, p. 136).

The Fit of Transformational Leadership Style and Innovation Behavior

Leadership styles, including transformational leadership, were a topic heavily researched. The transformational leadership style has claimed success not only at an organizational leadership level, manager level but also at the employee level (Dabke, 2016; Deinert, Homan, Boer, Voelpel, & Gutermann, 2015; Ismail et al., 2011; Jung, Chow, & Wu, 2006; Kark, Shamir, & Chen, 2003; Pieterse et al., 2010). Transformational leaders seek to enhance personal value with the followers, moving beyond self-interest for the good of others, such as direct reports, and to the larger organization (Bass, 1985). Transformational leadership style has been shown to influence all sorts of employee behaviors, innovation not excluded (Dabke, 2016). Research indicated the transformational leadership style was an effective leadership style for driving innovation (Choi et al., 2016; Hammond et al., 2011; Pieterse et al., 2010; Shafie et al., 2014).

The idea of the transformational leadership styles connection to innovation has been studied for nearly 30 years (Howell & Avolio, 1993). Howell and Avolio (1993) researched how Burns (1979) leadership styles of transformational, and transactional influenced performance, including innovation. Howell and Avolio (1993) found transformational leadership style positively influenced innovation where transactional leadership style negatively impacted innovation.

On an employee level, a direct manager who used the transformational leadership style had a positive influence on employees (Dabke, 2016; Ismail et al., 2011; Pieterse et al., 2010). Leaders who used transformational leadership style directly positively impacts the employee’s performance on how the employee behaved at the organization (Podsakoff, MacKenzie,

Moorman, & Fetter, 1990). Employees who had direct managers utilizing a transformational leadership style were found to have higher job satisfaction, feel empowered, and be innovative (Ismail et al., 2011; Kark et al., 2003; Pieterse et al., 2010).

When employees feel empowered (Spreitzer, 1995), the employees were more likely to be self-motivated to drive innovation and feel satisfaction (Kark et al., 2003). Empowerment was complex, made up of four intrinsic task motivations; impact, self-determination, competence and sense of meaning in the role (Spreitzer, 1995). Ismail et al. (2011) studied the relationship between empowerment and transformational leadership style. Ismail et al. (2011) validated previous research supporting the positive relationship between employee empowerment and innovation when leaders used a transformational leadership style.

At manager level, transformational leadership influenced innovation, leading to a competitive advantage, organizational learning, an improved company culture and business climate (Ekuma, 2014; García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012; Sarros, Cooper, & Santora, 2008; Wang & Rode, 2010; Wang & Howell, 2010). As organizations and the workforce have changed over time, and with the rise in innovative technology and flexibility, the transformational leadership style was now the dominant discussion concerning how organizations can be competitive and effective (Ekuma, 2014). Innovation in an organization thrived when leaders wove a transformational leadership style into an interactive organization vision, effective communication, appropriate risk, creativity, and shared values (García-Morales et al., 2012). García-Morales et al. (2012) studied how the relationship between organizational innovation and transformational leadership style positively influenced and impacted the organization's performance which led to the importance of organizational culture.

Organizational innovation was strongest when an organization had a healthy culture (Sarros et al., 2008). Influential organizational culture was positively correlated when leaders used transformational leadership skills by supporting and driving a culture of innovation (Sarros et al., 2008). As the global economy and technology were changing, organizations needed to be more entrepreneurial or intrapreneurial, adaptive, flexible, and innovative, and a transformational leadership style supported these needs (Sarros et al., 2008).

Innovation often led to change. Holten and Brenner (2015) analyzed employee perception of transformational and transactional leadership styles in various times of change. Holten found different stages of change had different desires on leadership style however transformational leadership was consistently best throughout all stages of change. Wang and Rode (2010) analyzed innovative climate influence and employee identification of transformational leadership style, as well as follower creativity. Wang and Rode (2010) found a triple interface between, “employee identification with the leader, innovative climate, and transformational leadership” (p. 1105), all having a relationship with employee creativity.

Transformational leadership was one of the most important indicators of innovation behavior (Choi et al., 2016). Some researchers considered transformational leadership to be one of the utmost influential factors to stimulate innovation (Choi et al., 2016). Choi et al. (2016) found a noteworthy relationship between transformational leadership style and innovative behavior from the population of employees. Hammond et al. (2011) also found a positive relationship, although weaker.

Kark et al. (2003) found there was a positive relationship between leaders who used the transformational leadership style and employee empowerment. Pieterse et al. (2010) explored deeper into empowerment and studied the effect of empowerment on transformational leadership

and innovative behavior. Pieterse et al. (2010) found when employee empowerment was high, the transformational leadership style was positively related to innovative behavior which suggested the importance of transformational leaders empowering the team.

Transformational leadership has been proven to be important to lead innovation at all levels of an organization. CEOs played key roles in leadership and overall strategy and priorities of an organization however little studies have focused on CEOs until Jung et al. (2006). Jung et al. (2006) studied 50 firms and found a strong relationship between innovation at the organization and transformational leadership of the CEO. Although all levels of leadership was important in driving innovation, the study focused on the direct manager, the person who has the most impact and influence on the day to day work of an employee.

Research has found the transformational leadership style influences organizational culture, product development, and product innovation implementation (Shafie et al., 2014). Kentrus (2017) found utilizing a transformational leadership style by championing the organization transformed the company through innovation. Lastly, when leaders have a transformational leadership style, transformational leadership style spurs the innovation needed to stay relevant to the customers (Shafie et al., 2014). Shafie et al. (2014) found there was a connection not only between innovation space and transformational leadership but also the information needed for product innovation implementation.

Synthesis of the Research Findings

Innovation became more and more important in both the global economy (Kuo-Chih et al., 2014) as well as setting companies apart from the competition (Shafie et al., 2014). Leaders within companies need to continue to drive innovation through the employees. Furthermore, leaders cannot just tell the employees to innovate, both the leaders (García-Cruz et al., 2018) and

the employees (Hammond et al., 2011) need specific skills and behaviors driving and delivering innovation.

The study uses the Transformational Leadership Theory (Bass, 1985) and Lukes and Stephan's (2017) theoretical model on measuring employee innovation. The clear commonality between the two models was the importance of leadership to innovation. Both Transformational Leadership Theory (Bass, 1985) and Lukes and Stephan's (2017) theoretical model found the connection to innovation however was not clear how both may connect together, with a potential mediation relationship would help future leaders drive innovation for the company.

Through the review of the literature, the following findings led to the study: (a) Importance of innovation to business, (b) Leadership essential to innovation, (c) Skills and behaviors necessary to drive innovation, and (d) The fit of transformational leadership style and innovation behavior. The purpose of the section synthesizes the literature discovered the need for the study.

Existing research yielded several studies agreeing on the importance of innovation to business and innovation leadership (Gruber et al., 2015; Kuo-Chih et al., 2014; Weyrauch & Herstatt, 2016). Kuo-Chih et al. (2014) discussed due to globalization and increased innovation, businesses needed to focus on product innovation to stay competitive. Innovation has been found as the critical driver for setting the business apart in industry (Gruber et al., 2015; Kuo-Chih et al., 2014; Weyrauch & Herstatt, 2016), which resulted in better growth for the company (Kuo-Chih et al., 2014). Innovation, in most any capacity, was significant in driving the business forward (Omri, 2015). Not all or just any innovation applied to business means sales and profits rose, but thoughtful innovation aligning and supporting the vision, mission, and values as well as

analyzed to support the businesses goals was what drives financial growth in business (Mayhew et al., 2016).

Also, the literature led to synthesizing leadership essential to innovation (Chang, 2016; Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). Leadership involvement in critical decisions suggested increased job satisfaction, improved product innovation, and trust between leadership and employees (Kuo-Chih et al., 2014). Employees were more successful in product innovation when there was support from leadership (Omri, 2015). Research supported leadership being essential to innovation but to be a successful leader; the leader must have unique skills (García-Cruz et al., 2018). Yet to move product innovation ideas forward, employees needed a direct leader to provide a foundation and support (Omri, 2015).

Research also yielded the importance of skills and behaviors necessary to drive innovation (Eggers & Kaul, 2018; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). Innovative behaviors were essential in both the employee and the leader (Omri, 2015). Specific skills and characteristics were essential in product innovation (García-Cruz et al., 2018). García-Cruz et al. (2018) found leaders used characteristics identified as organizational learning capability (OLC) when assisting employee innovation implementation led to greater innovation success.

Essential skills a leader needs help move product innovation forward were problem solving (Omri, 2015), motivation (Eggers & Kaul, 2018) and trust of employees (Naranjo-Valencia et al., 2017). When leadership was committed to innovation, then research suggests leadership will be more likely supportive of the time needed to pursue product innovation (Kentrus, 2017). If leaders would like their team to spend the time to pursue product innovation,

then leaders would more likely ensure the time was well spent and the time would be analyzed to make sure the innovation time generates revenue to an organization bottom line in some capacity (Godart et al., 2017).

Jung et al. (2003) found when transformational leadership was involved in innovation, by providing a clear strategy and leadership, more strategic choices and successful innovations resulted. Visnjic et al. (2016) found leaders using the product oriented business model to drive innovation had better results. The connection of transformational leadership style in the influence on various forms of successful innovation has been heavily researched (Chang, 2016; Jung et al., 2003; Shafie et al., 2014).

Additional strengths include the connection of innovation and the importance of transformational leadership (Choi et al., 2016; Pieterse et al., 2010; Shafie et al., 2014). However, the mechanism by which leadership styles affect employee innovative behaviors was not clear. Upon reviewing existing literature, discussion on the leader's specific behavior to drive innovation was sparse, driving the weakness leading to the study. Sparsity also existed in research on understanding the employee's perceptions of the leadership style of direct leaders. Research existed on how leaders can influence their employees' innovative behaviors but research discussing which behaviors leaders should exhibit to drive innovation was lacking, especially from the employee's perception.

The collective findings of the increased need for product innovation in the globalized competitive economy (Kuo-Chih et al., 2014), leadership support for innovation (Omri, 2015), the existing connection of transformational leadership style influencing different forms of innovation (Shafie et al., 2014), and specific skills and behaviors were essential in product innovation (García-Cruz et al., 2018), led to the need for the study. Research supported the

importance of leadership in innovation, the connection to employee innovation but does not discuss the potential mediating variable of innovation managerial support.

Critique of Previous Research Methods

The purpose of the quantitative nonexperimental explanatory research applied the theory of transformational leadership relating leadership styles to employee innovation behaviors, for product innovation employees from U.S. product innovation companies. The study used Lukes and Stephan (2017) theoretical model to understand if managerial support was the mediating relationship between leadership style and employee innovation behavior. However, previous research has not addressed the mechanism by which leadership styles affected employee innovation behaviors, nor have researchers assessed employee innovation behavior in combinations with the perceptions of the employee's direct leadership style (Choi et al., 2016; Pieterse et al., 2010; Shafie et al., 2014). The literature gap in the field of business management study provided potential data informing managers of employees who create product innovation. Without understanding the impact of employees' perception of their direct manager's leadership style has on employee innovation behavior and the possible mediated effect of managerial innovation support, managers do not have the mechanism to influence their employees' innovation behaviors to drive the business forward.

Innovation has been a heavily researched topic which has led to strong meta analysis on the topic was formally systematically reviewed previous research (Hammond et al., 2011; Tornatzky & Klein, 1982). Previous researchers noted past innovation research was primarily narrative (Hammond et al., 2011). However the research used in the study has led to more quantitative research (Dabke, 2016; García-Cruz et al., 2018; Markham, 2013; Mayhew et al.,

2016; McAdam, 2005; Stock, 2011, 2015; Stock, Zacharias, & Schnellbaecher, 2017), with very little qualitative (Maier & Brem, 2018), and a mixed method (Rosing et al., 2011).

Another critique on existing literature was the lack of innovation research in the United States as existing research was primarily all outside the United States (Choi et al., 2016; Jung et al., 2003; Lukes & Stephan, 2017; McAdam, 2005; Naranjo-Valencia et al., 2017; Omri, 2015). With past research primarily outside of the United States, the study helped fill the gap by providing data from the United States. Existing research has not made the critical connection of collecting data from employee perceptions of both self-reported innovation behavior and the connection with the direct manager's perceived leadership style.

The study built and contributed to the theory of transformational leadership as well as the theoretical model by Lukes and Stephan (2017) connecting innovation managerial support with employee innovation behaviors (Figure 1). The study contributed to the theory by connecting employee's innovation behavior with transformational leadership, mediated by managerial innovation support. The study built onto Lukes and Stephan's theoretical model (Figure 1) by adding the transformational leadership style and managerial support as the mediator between innovative behavior and transformational leadership style (Figure 2). Based on the results of the study, the hypotheses would be the significance of the contribution would inform direct leaders of the employee's perceptions of the effect a transformational leadership style has on their employee innovation behaviors and the mechanism by which innovation support mediates the relationship. Simply put, the research answered if managerial innovation support behaved as a necessary middleperson of employee innovation behaviors and transformational leadership.

Figure 3 shows the theoretical model without significance in managerial innovation support mediating. Figure 3 illustrates there was not a need for innovation managerial support to

be present for innovative behavior and transformational leadership style to have a strong relationship. However, both managerial support and transformational leadership style still connected to innovative behavior.

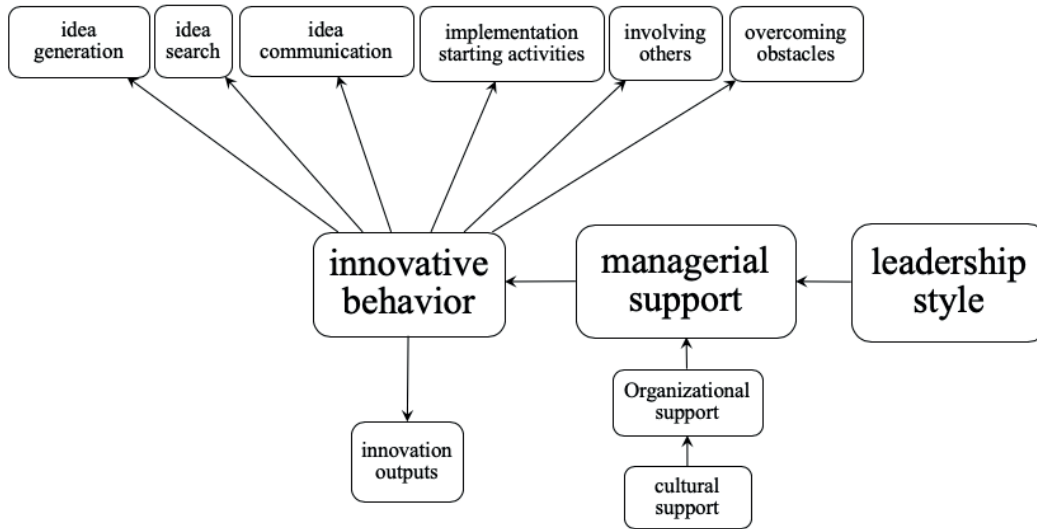


Figure 2. Model of the study showing managerial support as mediator between innovative behavior and leadership style.

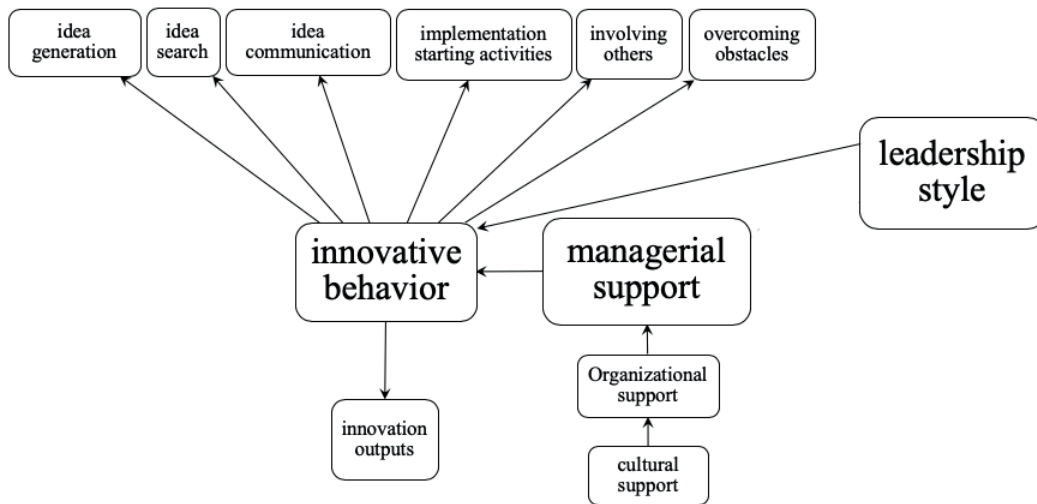


Figure 3. Model of the study showing managerial support and leadership style related to innovative behavior but not as a mediator.

Figure 4 shows the results of the study, discounting innovation managerial support relationship to innovative behavior. Lukes and Stephan (2017) found a direct relationship with employee innovation behaviors and leadership style. Figure 4 shows the study discounting previous research but still finding leadership style connected to innovative behavior.

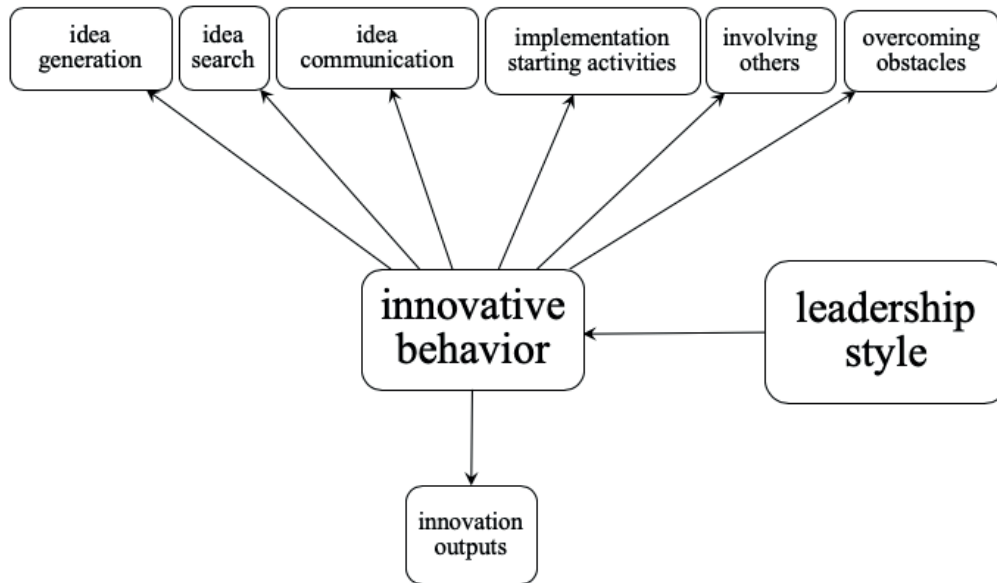


Figure 4. Model of the study showing managerial support having no relation to innovative behavior but and leadership style does relate to innovative behavior.

Summary

After reviewing the results from all the research reviewed and presented, the purpose of the research was to assess the mediating effect of managerial support on the relationship between employee innovation behavior and transformational leadership style. The study applied the theory of transformational leadership which related leadership styles to employee innovation behaviors for product innovation employees from U.S. product innovation companies. In summary, the literature review found product innovation provided a competitive advantage,

leaders were needed to support product innovation, and specific leadership skills were essential to product innovation. The decision on the topic of the study developed after a thorough review of past research and identification of gap in research which has not been addressed.

Chapter 2 focused on previous research exploring the areas of innovation and leadership, specifically leadership essential to innovation, the skills and behaviors necessary to drive innovation. In addition, the importance of innovation to business and the variables of employee innovation behavior, transformational leadership style, and managerial support were presented. However, what was not addressed was the mechanism by which leadership styles affected employee innovation behaviors. Past research provided a platform the study leveraged and improve upon the foundation, while focusing on employee perception of the employee's leaders. The literature review demonstrated what was known about transformational leadership and innovation behaviors; however, what has yet to be addressed was the mechanism by which the connection of transformational leadership style and innovation behavior operates.

CHAPTER 3. METHODOLOGY

Chapter 3 will cover all aspects of the methodology used in the study, including the purpose of the study, research questions, hypotheses, research design, target population, sample, procedure, resources, descriptive statistics, hypothesis testing, post hoc analysis, instruments, validity, reliability, ethical considerations, and concludes with a summary.

Purpose of the Study

Based on research product innovation has a key competitive advantage (Gruber et al., 2015; Kuo-Chih et al., 2014; Markham, 2013; Weyrauch & Herstatt, 2016). Research has also found leaders are needed to drive and support product innovation (Chang, 2016; Cheng et al., 2017; García-Cruz et al., 2018; Kuo-Chih et al., 2014; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). Specific leadership skills and behaviors were essential to product innovation many researchers have found (Eggers & Kaul, 2018; Markham, 2013; Naranjo-Valencia et al., 2017; Omri, 2015). The research stated the importance of leadership in innovation and the effect on employee innovation behaviors; however, research has not evaluated the potential mediating variable of managerial support.

The general gap in research was the need to understand how leaders drive innovation through employees, providing a better competitive advantage and more profitability for organizations. Based on research, the transformational leadership style connected with innovation behavior (Chang, 2016; Jung et al., 2003; Shafie et al., 2014). Lukes and Stephan (2017) studied many methods for measuring innovation behavior and developed a theoretical model explaining managerial support's impact on innovation behavior.

The study researched the following topics: product innovation provided a competitive advantage, leaders needed to support product innovation, and specific leadership skills were

essential to product innovation. However, research has not revealed the mechanism of the influence of managerial support. The previous research defined the influence of transformational leadership and managerial support on innovation behavior but not the influence of both on innovation behavior. Therefore, the study analyzed the potential mediating influence of managerial support between transformational leadership and innovation behavior.

Analyzing the potential mediating effect between the two variables helps inform the causal chain of the behaviors. A causal chain happens when one variable affects a second variable, affecting a third variable (Judd & Kenny, 1981). The practical side of understanding if managerial support serves as the mediator between transformational leadership style and innovation behavior helps leaders, and organizations best understand how to influence and predict employee innovation behavior. Therefore, the study impacted the theoretical foundation by providing more clarity on how the transformational leadership style influences employee innovation behavior through managerial support mediation.

The purpose of the quantitative nonexperimental explanatory research applied the theory of transformational leadership relating leadership styles to employee innovation behaviors. The study's population was product innovation employees from U.S. product innovation companies. The study also used Lukes and Stephan's (2017) theoretical model to understand if managerial support was the mechanism relationship between leadership style and employee innovation behavior.

The dependent variable studied was self-reported employee innovation behaviors. The participants were employees who create products, recruited through a third party, Qualtrics XM, which collected data electronically. The independent variable was the employee's perception of the leadership style of the direct leader. Data collected helped assess the current perceptions of

the employee's direct leader's style. An analysis was conducted regarding the explanatory relationship between what the employee's current leadership style was to the employee's innovation behaviors. The mediating variable was the employee perception of innovation managerial support. Data was collected for assessing the employee perceptions of the managerial, organizational, and cultural support for innovation. The mediating relationship between the employee's current managerial innovation support and the employee's innovative behaviors was analyzed.

Research Questions and Hypotheses

RQ1. To what extent does transformational leadership style relate to employee innovation behavior?

H₀: Transformational leadership style does not relate to employee innovation behaviors.

H_a: Transformational leadership style does relate to employee innovation behaviors.

RQ2. To what extent does managerial support relate to employee innovation behavior?

H₀: Managerial support does not predict employee innovation behaviors.

H_a: Managerial support does predict employee innovation behaviors.

RQ3. To what extent does managerial support serve as a mediating variable between transformational leadership and employee innovation behavior?

H₀: Managerial support does not mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

H_a: Managerial support does mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

Research Design

The research methodology was quantitative. The study design was nonexperimental research using the approach of simple linear regression analysis to investigate whether there was a statistically significant explanatory relationship between the predictor and the outcome variables and mediation analysis to answer RQ3. In research, there were three different research methodology approaches, quantitative, qualitative, mixed methods (Creswell, 2014; Gelo, Braakmann, & Benetka, 2008). Qualitative research captures text through interviews and discussions with the participants and smaller sample sizes (Creswell, 2014). Quantitative research analyzes and quantifies the findings by collecting data from larger sample sizes (Guo, 2014). The third and last research methodology was mixed method research, which uses a mix of both quantitative and qualitative research. The study used quantitative research due to the study's foundational instruments having quantifiable data, and past studies using the instruments were quantitative. Quantitative research validates Lukes and Stephan's (2017) findings between managerial support and innovation behavior.

A nonexperimental research design works to answer the research questions and hypotheses with no experiment needed, such as an experiment conducted in a lab or experiment with persons. There was no need to run an experiment to answer the research questions in the study. Only numeric Likert data was gathered to answer the research questions. Therefore, nonexperimental research was used (Creswell, 2014).

Simple linear regression helped predict the results of future situations with the same variables (Field, 2018). Simple linear regression defines the explanatory relationship between the variables (Field, 2018). Simple linear regression was used in the research, seeking to understand the relationship between employee innovation behavior, managerial support, and

transformational leadership style. The first two research questions leveraged simple linear regression to understand the relationship. The third research question sought to understand the potential influence of managerial support as a mediator. To understand if managerial support mediates between transformational leadership style and employee innovation behavior, the Baron and Kenny (1986) method for analyzing the mediating variable utilized data from a multiple linear regression analysis.

The analysis measured the effect the transformational leadership style had on employee innovation behavior. Then another analysis measured the effect managerial support had on employee innovation behavior. Next, the analysis reviewed the explanatory relationship in which transformational leadership results in employee innovation behavior through innovation managerial support. Figure 2 is a visual representation of the research design.

Strength in the research design was reflected in the ability to utilize quantitative research to gather data for a larger sample size than a qualitative study would achieve (Gelo et al., 2008). Another strength was the ability to utilize a third party, Qualtrics XM, to collect the sample, allowing the research to be much broader across the U.S. demographically than utilizing other methods of gathering the sample participants, such as professional networks (Boas, Christenson, & Glick, 2018). The last strength was good internal validity by utilizing existing instruments with existing factual validity and reliability (Bass & Avolio, 1990, 1995, 1997, 2004; Lukes & Stephan, 2017). Due to the study's nature, internal validity was strong as there were no threats to the experimental procedure due to using existing instruments and no threats to treatment or experience to participants as the research was nonexperimental.

However, a weakness in the design was a lack of gathering participant specific feedback outside the standard instruments a qualitative study would collect (Gelo et al., 2008). Utilizing a

third party was also a weakness as only those opting into Qualtrics XM had access to the survey, threatening the external validity (Qualtrics, 2019). Creswell (2014) defined a threat to external validity as an interaction of treatment and selection, due to participants possessing a narrow number of characteristics.

There were a few approaches to analyzing mediating variables. Newsom (2018) analyzed Judd and Kenny's (1981), Sobel (1982), and Baron and Kenny's (1986) methods for analyzing mediating variables. Simple mediation was essential to test the indirect pathway's significance, meaning one variable affects the other variable through the causal chain (Newsom, 2018). Newsom (2018) found Baron and Kenny's (1986) approach does not test for the significance of the indirect pathway, but Sobel (1982) and Judd and Kenny's (1981) approaches do test for the significance. However, the study used Baron and Kenny's (1986) approach to analyze the simple mediation process as the method was the most used approach amongst researchers.

The sampling plan for the study was probability random sampling. Random sampling was the ideal method (Else-Quest & Hyde, 2016) and suits the study well as the research was sampling a specific target population of employees who innovate products. Probability sampling was defined as all members of the target population having an equal chance to participate (Trochim, 2006). The study utilized a Qualtrics XM online panel where the participants have the choice to participate. Although the online panel population was a group of the total target population, the participant pool chose at random to participate; the entire population could not be reached.

The participants were identified through Qualtrics XM, a cross sectional instrument for collecting data from a statistically significant sample, and the sample size was calculated with G*power 3.1.9.6. Participants were U.S. based employees recruited through Qualtrics XM, who

create product innovation. The responses to the survey were collected electronically. An overview of the step by step methodology is as follows:

1. A third party collected the sampling population and recruited participants based on the defined criteria. Next, the sampling population received survey instruments.
2. Once the surveys were complete, data were reviewed to ensure the population met the requirements and ensured valid responses.
3. Once the full data set was received, all questions were double checked to ensure all questions were not flip scale.
4. All collected answers in the nominal format were replaced to the appropriate Likert scale interval defined in the instrument (for example, answer “fully disagree” and replace with number “1”).
5. Next, IBM Statistical Package for the Social Sciences (SPSS) Version 26.0 was used to analyze data using simple linear regression and mediation analysis, to test the assumptions, hypotheses and statistical significance.
6. Lastly, the Baron and Kenny (1986) process analysis was used for estimating simple mediation. Newsom (2018) summarized the mediation analysis in the following steps:
 - 6.1.Step 1 - Conducted a standard linear regression analysis investigating the relationship between transformational leadership and managerial support.
 - 6.2.Step 2 - Conducted a standard linear regression analysis investigating the relationship between managerial support and innovation behavior.
 - 6.3.Step 3 - Conducted a standard linear regression analysis investigating the relationship between transformational leadership and innovation behavior.
 - 6.4.Step 4 - Conducted a multiple regression analysis with transformational leadership and managerial support predicting innovation behavior.

Target Population and Sample

Some may believe the population and sample were used interchangeably when in actuality, population and sample were different. The population is the entire group of subjects one looks to research (Field, 2018). However, it was nearly impossible to survey the entire population for the study. Therefore, studies choose a population sample, ideally representing the

entire population (Field, 2018). The sample is a subset of the larger target population (Field, 2018).

Population

The larger target population was employees who create or modify products and have a direct supervisor. Ultimately, researchers have found product innovation has a key competitive advantage (Gruber et al., 2015; Kuo-Chih et al., 2014; Markham, 2013; Weyrauch & Herstatt, 2016). Therefore, the organizations hiring employees who create and modify products and leadership were included in the broader population.

The total product innovator population was unique. Product Innovators have various titles and backgrounds; therefore, the exact population size has not been published in peer reviewed journals. The study had Qualtrics XM search for product innovators that could have the titles of Product Engineer, Industrial Designer, Product Designer, Product Developer, Product Manager, or Technical Designer. According to the U.S. Bureau of Labor Statistics *Occupational Outlook Handbook*, in 2019, there were 42,200 Industrial Designers, 1.68 million total engineers, 28,300 Fashion Designers, which was the educational degree Technical Designers generally hold (U.S. Bureau of Labor Statistics, 2019). Nielsen Global Connect also released, “Every 2 minutes, a new product is launched to the U.S. Marketplace” (Nielsen, 2019, “Press Room,” para. 1) which helps provide the number of people behind the new product. Although the numbers provided from the U.S Bureau of Labor Statistics Occupational Outlook Handbook were not inclusive or exclusive to the product innovator role, and the Nielsen report does not discuss the people behind the new product, the data does provide general population guidance. The population was not specific to gender, age, and race/ethnicity; however, the study collected the participants’ age, gender, ethnicity, and race for demographic purposes.

Sample

The sampling criteria aligned with the total population: employees who create products, have a direct leader, work in the U.S., were born in the U.S., and have been a product innovator for at least one product cycle. Product innovation was defined as new or improved products introduced to the market (García-Cruz et al., 2018). Having a direct leader was critical for the study, as the study was seeking the employee's perception of their direct supervisor's leadership style. U.S. born participants working in the U.S. were requested to remove any cultural influences of those born outside the U.S., such as hierarchical leadership commonly found in India and not common in the U.S. (Malinowski, 2013). The participants were required to be a product innovator for at least one product life cycle, requested to help provide some tenure in the employee's direct manager's opinions and perceptions. The sample excluded government and not for profit employees and employees who owned their own business due to not having a direct leader.

The study collected the participants' age, gender, ethnicity, and race. The study also collected current employment status, which U.S. state the participant resides, which industry the participant works in, participants' level of education, blue collar or white collar status, and company size.

The sample criteria and qualifying questions were sent to a third party provider, Qualtrics XM, to gather the sample population. Qualtrics XM was used to gather the population to collect a larger diverse pool of participants instead of potentially biased professional organization members or personal networks. Qualtrics XM (2019) supplies a diverse population by working with more than 20 of the world's largest, most well known, strategically selected sample providers. All of the Qualtrics sample partners adhere to ESOMAR standards and GDPR

guidelines (Qualtrics, 2019). Qualtrics (2019) actively manages market research double opt in panel samples. To help ensure valid respondents, Qualtrics (2019) uses complex, continuously improving digital fingerprinting technology and validates every IP address. All of Qualtrics sampling partners use deduplication technology, hold full psycho demographic profiles and were required to update regularly to ensure accuracy to retain the integrity and reliability of data (Qualtrics, 2019).

Power Analysis

The purpose of calculating a power analysis was to compute the minimum sample size needed to allow the effect in the sample to be discovered and understand the effect of the statistical significance. G*Power 3.1.9.6 sample calculator software was used to conduct the calculation for the sample size N (Faul, Erdfelder, Lang, & Buchner, 2007). G*Power was used to help determine statistical power to limit studies from not being reliable (Faul et al., 2007). The calculation was based on (a) test family, the F test, (b) statistical test, linear multiple regression: Fixed model R^2 deviation from zero, (c) type of power analysis, A priori: Compute required sample size – given α , power, and effect size, since the ideal sample size N was established before the study (Faul et al., 2007), (d) effect size f^2 , medium effect size of 0.15, (e) α err probability of $p = 0.05$, (f) Power ($1 - \beta$ err prob) of 0.95 was used in the study, to detect the effect with at least 95% certainty and avoid Type I and Type II errors (Faul et al., 2007; Field, 2018), and (f) number of predictors, as 1. G*Power then calculated a target sample size as a minimum of 89 participants. The research targeted 120-140 participants to account for a potential loss during the data collection and analysis process. Type I error, defined as the belief of a real effect in the population when in actuality, there was not (Field, 2018). Type II error, defined as

the opposite of Type I, believes there was no effect in the population when there was (Field, 2018).

Procedures

Methods and procedures are different. Methods are general, explaining what will be done to complete the task. Procedures provide the details on how the methods will be executed.

Participant Selection

Probability random sampling was defined as the total population in a study having equal probability to participants. The participants were chosen at random (Creswell, 2014). Probability random sampling was the ideal method to use; however, the study utilized a Qualtrics XM online panel with a choice of participation. The online panel population was a group of the total target population, people who were product innovators; only participants choosing to participate in the survey were able to participate; the total population could not be reached in reality. Once participants opted into Qualtrics's panel, Qualtrics invited the participants based on how the participants described themselves in the application matching the research criteria. When the participants received the invitation, those interested in the study completed the surveys. The process ensured the desired sample size was met.

There was no specific recruitment site location for the study. Participants completed the surveys at the location of their choice. Qualtrics XM gathered the desired population, and the participants went through a series of screening questions to ensure the qualifications met the target population. A participant was removed from the research if the participant answered "no" to any of the screener questions. All the participants meeting the seven screener questions read through the approved adult consent form. Only participants who approved the consent form continued into the study.

Protection of Participants

Specific steps were taken to ensure participants had enough information about the study to make an informed decision in terms of whether or not to participate. The Capella approved adult base consent form was updated to include the study's details and was provided to all participants. The adult consent form was also approved by the Capella dissertation chair and the Capella Institutional Review Board (IRB) before the participant's review. The approved adult consent form was then uploaded into the Qualtrics XM software platform, serving as the eighth question, which followed the seven screener questions. If the participants wanted to advance in the survey, the participants opened and read the adult consent form. Only the participants who chose "I consent" continued onto the surveys. The participants were asked to keep or print a copy of the consent form for the participant's records.

Data Collection

The research was not conducted at any specific recruitment site. Therefore, no site permission was required. A license from Qualtrics to issue the surveys was obtained. Qualtrics software was used to build the survey, including the screening questions, adult consent form, and reproduction of the three instruments; MLQ, ISI, and IBI. The participants received the instruments electronically and completed the surveys at the location most appropriate for the participant.

The study utilized three instruments to collect data; therefore, permission was obtained to use all instruments. Approval was received from Mind Garden on October 24, 2019, for the Multifactor Leadership Questionnaire (MLQ). The approval for the Innovation Behavior Inventory (IBI) and Innovation Support Inventory (ISI) was received from the author on November 26, 2018.

Utilizing Qualtrics XM allowed data collected to be stored in a format that provides more efficient analysis and quicker submissions (Sekaran & Bougie, 2016). The participants worked directly with Qualtrics XM and only contacted the researcher through the contact information in the adult consent form if the participant had questions or concerns about the study.

The step by step methodology;

1. Qualtrics XM collected the sampling population and recruited participants based on the criteria.
2. To help eliminate participants from straight lining through the survey and not providing accurate responses, a forced validation question of, “Please select Not at all” was added halfway through the survey. Participants’ who did not choose, “Not at all” were automatically removed from the survey.
3. Specific criteria were defined to ensure the right target population. The participants answered the following questions, and if any questions were “no,” the participant was removed from the survey.
 - 3.1. For your job, do you currently work on product innovation? Product innovation is defined as new or improved products to market.
 - 3.2. Do you have a manager, a direct supervisor?
 - 3.3. Do you work in the United States?
 - 3.4. Have you created or modified product for a least one product life cycle (from idea to implementation)?
 - 3.5. Were you born in the United States?
 - 3.6. Do you currently work for a company that is NOT the government or a not for profit organization?
 - 3.7. For your main job, do you work for someone else (you do not own your own business)?
4. If the potential participants met the criteria, the participants were issued an informed consent form to read. The participants electronically signed by choosing, “I consent” moved forward. The participants who disagreed were removed from the survey.
5. Next, the sampling population received the following survey instruments: First, the managerial support inventory; next, the MLQ determined transformational leadership style; and finally, the innovation behavior inventory.

6. Qualtrics XM stopped the survey after 10% of the sample population completed the survey to review the correct survey setup. A final check was implemented to ensure all qualification questions were answered correctly to allow the ideal population to proceed. All participants who proceeded consented to the study, and all questions were answered. When data errors were discovered, the survey was fixed, and unqualified participants were removed from the study. When the process was satisfactory, the remaining 90% of surveys were issued.
7. Qualtrics XM advised when the desired survey quantity for the target population was achieved, and data was ready for review.

Data Analysis

All variables were interval level variables. IBM Statistical Package for the Social Sciences (SPSS) Version 26.0 was used to analyze data, entailing simple linear regression analysis to test the hypotheses and statistical significance. All data was collected on a password protected laptop, in an Excel format, and was uploaded into SPSS for analysis.

The type of data was continuous, as all instruments sought a range in values using Likert scales (Creswell, 2014). The research questions explored an explanatory relationship between the variables. Therefore, the best test for the research was a simple linear regression (Field, 2018). The parametric assumption was defined as the sample data distributed normally with continuous data (Field, 2018). Therefore, the mean was used.

Descriptive Statistics. To analyze data, descriptive statistics were produced to help describe the visual data shown by SPSS various graphs and charts. Descriptive outputs pertained to the independent variable transformational leadership style, dependent variable employee innovative behavior, and mediating variable of managerial support. The specific descriptive statistics relevant in the study were mean and standard deviation. The mean was used to understand each variable's average score, and the standard deviation was utilized to understand the extent data was spread.

Once the collected data set was downloaded to a Microsoft Excel Version 16.37 spreadsheet, data was reviewed to ensure all participants meet the requirements and ensured all responses were complete. If any participant did not meet the requirements or answer all questions, the participant was replaced with a new participant. Next, a review of all questions was completed to review data to ensure and double check all questions were not reverse scored. The reverse score happens when one answer on a Likert Scale was scored, for example, high for happiness, but the next was scored low for happiness. When the data was then averaged, it was inaccurate (Sekaran & Bougie, 2016). All nominal format data was then updated to the appropriate Likert scale interval defined in the instrument (for example, replacing the answer “fully disagree” with number “1”).

Next, Excel formulas were used to create one piece of data per variable per participant. For innovation support inventory (ISI), the five questions supporting managerial support were averaged, the MLQ Manual was used to identify the 20 questions supporting five different subgroups of the transformational leadership style, and finally, innovation behavior inventory (IBI) was broken down into the seven subgroups. The subgroups did not consist of the same number of questions; therefore, using an average of the subgroup average was not accurate. Excel formulas created one total average supporting innovation behavior. In the end, data was formatted into three total averaged data points per participant; managerial support, transformational leadership style, and innovation behavior.

Hypothesis Testing. IBM Statistical Package for the Social Sciences (SPSS) Version 26.0 was used to analyze data using standard regression analysis to test the hypotheses and statistical significance for each research question. Once all data was uploaded into SPSS, research question 1 was initiated, creating a scatter plot to see if there was a linear relationship

between the variables. After the creation of the scatterplot, a regression line was added in SPSS to validate the fit. Next, the visual graphs and charts were assessed and revealed whether none, some, or all assumptions were violated.

Assumption #1, Linearity of residuals. The relationship between the variables had linearity reviewing the scatterplot in SPSS. A regression line was added to the scatterplot. Data along the regression line was reviewed, and if data formed an unusual shape, apart from the regression line, then linearity was violated. If data followed the regression line, then linearity was achieved.

Assumption #2, Outliers. Extreme outliers were identified and removed by analyzing the residual statistics box in SPSS after running the regression. The bottom row of data consisted of standardized residuals; the min/max should not have exceeded 3.29 or -3.29; if any exceeded these parameters, the participant's data was removed, and the process started over.

Assumption #3, Normality. A normal probability plot (P-P Plot, in SPSS) was created to see if all data and residuals were normally distributed. If data points followed the P-P Plotline, then residuals were normally distributed. SPSS also created a Histogram to check for normality; the histogram curve was reviewed to observe if data followed the curve. If data followed the curve; then the residuals were normally distributed. Conversely if data did not follow the P-P Plotline, or along the histogram curve, the residuals were abnormally distributed.

Assumption #4, Observations are independent. Residual errors were independent, not autocorrelated. Observations of independence were checked using the Durban Watson test for independence of errors, 0-4, and should have been close to 2. Less than 1 or greater than 3 were violations.

Assumption #5, Homoscedasticity. A review of residual error variance was completed to ensure the same across all values of the independent variable. To check for homoscedasticity, analyzed the scatter plot of standardized residual errors against independent errors. Looked for data to be similarly distributed along the scatterplot line.

Finally, Baron and Kenny's (1986) process analysis to estimate simple mediation was used to measure the mediation effect or lack of effect for research question 3. The following four steps defined by Newsom (2018) were used to analyze the mediating variable: First, created a simple linear multiple regression analysis to investigate the transformational leadership and managerial support. Second, created a simple linear regression analysis between transformational leadership and innovation behavior. Third, created a simple linear regression analysis between managerial support and innovation behavior. Lastly, conducted a standard linear multiple regression analysis to investigate the relationship of transformational leadership and managerial support potentially predicting innovation behavior.

Simple linear regression models were used to see if a prediction between two variables exists. There were two hypotheses tests, null (H_0) and alternative (H_a), to understand if there was an influence between the two variables. Hypotheses were tested using the F -test for overall significance, comparing an intercept only model to the research model to understand if there was a relationship between the independent variable and the response. SPSS was used to analyze by the F -ratio and p -value to understand if a significant difference existed. The p -value, also known as the sig value in SPSS, should have been less than 0.05 for the result to be significant. The F -ratio, or the f value in SPSS, should have been greater than 1 for an efficient model.

Instruments

The study utilized three different instruments: an innovation support inventory utilizing the managerial support subgroup, a multifactor leadership questionnaire utilizing the transformational leadership subgroups, and the innovative behavior inventory in the entirety. All three instruments were existing instruments with proven validity and reliability.

Multifactor Leadership Questionnaire (MLQ)

The Multifactor Leadership Questionnaire (MLQ) was known as one of the best instruments to measure transformational leadership style across many industries and professions (Avolio et al., 1999; Bass, 1990; Pieterse et al., 2010). Transformational leadership was identified in the study by the employee's perception of the direct manager. Data was collected to assess the current perceptions of their direct leader's style. The explanatory relationship between the employee's current leadership style and the employee's innovation behaviors was analyzed. The operational definition was summarized using the following five variables, which made up the average of the variables. The variables were comprised of four questions each, measured by a Likert scale of 0 to 4 (Bass & Avolio, 2004).

The first variable was Idealized Attributes (IA) or Idealized Influence (II(A)), which consisted of the following four questions: (a) Instills pride in me for being associated with him/her; (b) Goes beyond self-interest for the good of the group; (c) Acts in ways that builds my respect; and (d) Displays a sense of power and confidence.

The second variable was Idealized Behaviors (IB) or Idealized Influence (II(B)), which was comprised of the following four questions: (a) Talks about their most important values and beliefs; (b) Specifies the importance of having a strong sense of purpose; (c) Considers the moral

and ethical consequences of decisions; and (d) Emphasizes the importance of having a collective sense of mission.

The third variable was Inspirational Motivation (IM), which involved the following four questions: (a) Talks optimistically about the future; (b) Talks enthusiastically about what needs to be accomplished; (c) Articulates a compelling vision of the future; and (d) Expresses confidence that goals will be achieved.

The fourth variable was Intellectual Stimulation (IS), which was related to the following four questions: (a) Re-examines critical assumptions to question whether they were appropriate; (b) Seeks differing perspectives when solving problems; (c) Gets me to look at problems from many different angles; and (d) Suggests new ways of looking at how to complete assignments.

The fifth and last variable was Individual Consideration (IC), determined by the following four questions: (a) Spends time teaching and coaching; (b) Treats me as an individual rather than just as a member of a group; (c) Considers me as having different needs, abilities, and aspirations from others; and (d) Helps me to develop my strengths.

Validity. All items in the MLQ exceeded the recommended cutoffs for discriminant and convergent validity. The initial study discovered a transformational leadership scale at 0.30 coefficient validity, but every test after rose to 0.60 coefficient validity, and since that time, much research has validated similar results (Avolio et al., 1999; Bass, 1990; Pieterse et al., 2010).

Reliability. All scales' reliabilities in the MLQ were high, exceeding standard cutoffs for internal consistencies. The reliabilities of all six leadership factors ranged from 0.63 to 0.92 on the first sample set, and it was 0.64-0.92 on all replicated sets.

Innovative Behavior Inventory (IBI)

Innovative behavior inventory (IBI) was validated in three languages to ensure the survey was applicable across cultures, diverse industry branches, and sampled in multiple countries (Lukes & Stephan, 2017). Employee innovation behavior, the dependent variable, defined as the behavior through which a new idea was generated or adopted, was followed by efforts to be implemented by the employee (Lukes & Stephan, 2017). The construct of employee innovation behavior was identified with six variables leading to innovation output: “idea generation, idea search, and idea communication, implementation starting activities, involving others, and overcoming obstacles” (p. 136). The constructs disregard personality traits and focused on behaviors making up broader innovative concepts (Lukes & Stephan, 2017). The components were self-reported innovation behaviors by participants who create product innovation. The operational definition summarized the following seven variables, made up the average of the variable comprised of 3-4 questions, using a Likert scale of 1 to 5 (Lukes & Stephan, 2017).

The first variable was Idea generation, which involved the following three questions: (a) I try new ways of doing things at work; (b) I prefer work that requires original thinking; and (c) When something does not function well at work, I try to find a new solution.

The second variable was Idea search, which related to the following three questions: (a) I try to get new ideas from colleagues or business partners; (b) I am interested in how things are done elsewhere in order to use acquired ideas in my own work; and (c) I search for new ideas of other people in order to try to implement the best ones.

The third variable was Idea communication, which was connected to the following four questions: (a) When I have a new idea, I try to persuade my colleagues of it; (b) When I have a new idea, I try to get support for it from management; (c) I try to show my colleagues positive

sides of new ideas; and (d) When I have a new idea, I try to involve people who are able to collaborate on it.

The fourth variable was Implementation starting activities, tied to the following three questions: (a) I develop suitable plans and schedules for the implementation of new ideas; (b) I look for and secure funds needed for the implementation of new ideas; and (c) For the implementation of new ideas, I search for new technologies, processes or procedures.

The fifth variable was Involving others, which comprises the following three questions: (a) When problems occur during implementation, I get them into the hands of those who can solve them; (b) I try to involve key decision makers in the implementation of an idea; and (c) When I have a new idea, I look for people who are able to push it through.

The sixth variable was Overcoming obstacles, which was comprised of the following four questions: (a) I am able to persistently overcome obstacles when implementing an idea; (b) I do not give up even when others say it cannot be done; (c) I usually do not finish until I accomplish the goal; and (d) During idea implementation, I am able to persist even when work is not going well at the moment.

The seventh and last variable was Innovation outputs, which entailed the following three questions: (a) I was often successful at work in implementing my ideas and putting them in practice; (b) Many things I came up with are used in our organization; and (c) Whenever I worked somewhere, I improved something there.

Validity. IBI showed discriminant, convergent, factorial (Figure 5), and criterion validity (Table 1; Lukes & Stephan, 2017).

Reliability. The IBI showed excellent internal reliability across several studies across several cultures (Table 2; Lukes & Stephan, 2017).

Table 1

Items of IBI and ISI Factor Loading Based on Confirmatory Factor Analysis

Item	Factor loading
<i>Innovative Behavior Inventory</i>	
Idea generation	
I try new ways of doing thing at work	0.686
I prefer work that requires original thinking ^a	0.648
When something does not function well at work, I try to find new solutions	0.612
Idea search	
I try to get new ideas from colleagues or business partners	0.776
I am interested in how things are done elsewhere in order to use acquired ideas in my work	0.771
I search for new ideas of other people in order to try to implement the best one	0.758
Idea communication	
When I have a new idea, I try to persuade my colleagues of it	0.665
When I have a new idea, I try to get support for it from management	0.727
I try to show my colleagues positive sides of new ideas	0.701
When I have a new idea, I try to involve people who are able to collaborate on it	0.460
Implementation starting activities	
I develop suitable plans and schedules for the implementation of new ideas ^b	0.592
I look for and secure funds needed for the implementation of new ideas ^b	0.505
For the implementation of new ideas I search for new technologies, processes or procedures ^b	0.707
Involving others	
When problems occur during implementation, I get them into the hands of those who can solve them ^c	0.351
I try to involve key decision makers in the implementation of an idea ^c	0.403
When I have a new idea, I look for people who are able to push it through	0.696
Overcoming obstacles	
I am able to persistently overcome obstacles with implement an idea ^c	0.778
I do not give up even when others say it cannot be done ^c	0.807
I usually do not finish until I accomplish the goal ^c	0.812
During idea generation, I am able to persist even when work is not going well at the moment	0.818
Innovation outputs	
I was often successful at work in implementing my ideas and putting them into practice	0.707
Many things I came up with are used in our organization	0.667
Whenever I worked somewhere, I improved something there	0.653
<i>Innovation Support Inventory</i>	
Managerial Support	
My manager motivates me to come to him/her with new ideas	0.738
My manager always financially rewards good ideas	0.546
My manager supports me in implementing good ideas as soon as possible	0.871
My manager is tolerant of mistakes and errors during the implementation of something new	0.542
My manager is able to obtain support for my proposal also outside our department	0.712
Organizational support	
The way of remuneration in our organization motivates employees to suggest new things and procedures	0.775
Our organization has set aside sufficient resources to support the implementation of new ideas	0.796
Our organization provides employees time for putting ideas and innovations into practice	0.609
Cultural support	
Most people in (country name) come up with new, original ideas at work	0.756
Most people in (country name) are able to really implement new ideas at work	0.823
Most people in (country name) look for new challenges at work	0.708
Most people in (country name) are able to improvise easily when unexpected changes happen at work	0.404
Sources: ^a Item from Jackson (1994); ^b modified item based on Scott and Bruce (1994); ^c modified item based on Howell, Shea & Higgins (2005)	

Note. From “Measuring employee innovation,” by M. Lukes and U. Stephan, 2017, *International Journal of Entrepreneurial Behaviour & Research*, 23(1), p. 145. Copyright 2017 by the Emerald Publishing. Reprinted with permission.

Table 2

Intercorrelation Table IBI and ISI Scales, Scale Reliabilities

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Idea generation	4.02	0.60	(0.67)									
2. Idea search	4.07	0.72	0.34***	(0.81)								
3. Idea communication	4.05	0.59	0.51***	0.38***	(0.72)							
4. Implementation starting activities	3.19	0.82	0.28***	0.20***	0.31***	(0.61)						
5. Involving others	3.91	0.67	0.32***	0.36***	0.57***	0.23***	(0.60)					
6. Overcoming obstacles	3.67	0.77	0.37***	0.20***	0.41***	0.25***	0.27***	(0.88)				
7. Innovation output	4.43	0.85	0.39***	0.13*	0.44***	0.41***	0.29***	0.37***	(0.78)			
8. Managerial support	3.53	0.81	0.13*	0.18**	0.27***	0.19**	0.25***	0.18**	0.21***	(0.82)		
9. Organizational support	2.99	0.88	0.00	0.07	0.16**	0.07	0.10	0.08	0.14	0.45***	(0.79)	
10. Cultural support	3.03	0.65	0.08	0.01	0.07	0.04	0.02	0.21***	0.23***	0.10	0.23***	(0.77)

Notes: $n = 267$. Cronbach's α are on the diagonal in parentheses. * $p < 0.05$; ** $p < 0.005$; *** $p < 0.001$

Note. From “Measuring employee innovation,” by M. Lukes and U. Stephan, 2017, *International Journal of Entrepreneurial Behaviour & Research*, 23(1), p. 148. Copyright 2017 by the Emerald Publishing. Reprinted with permission.

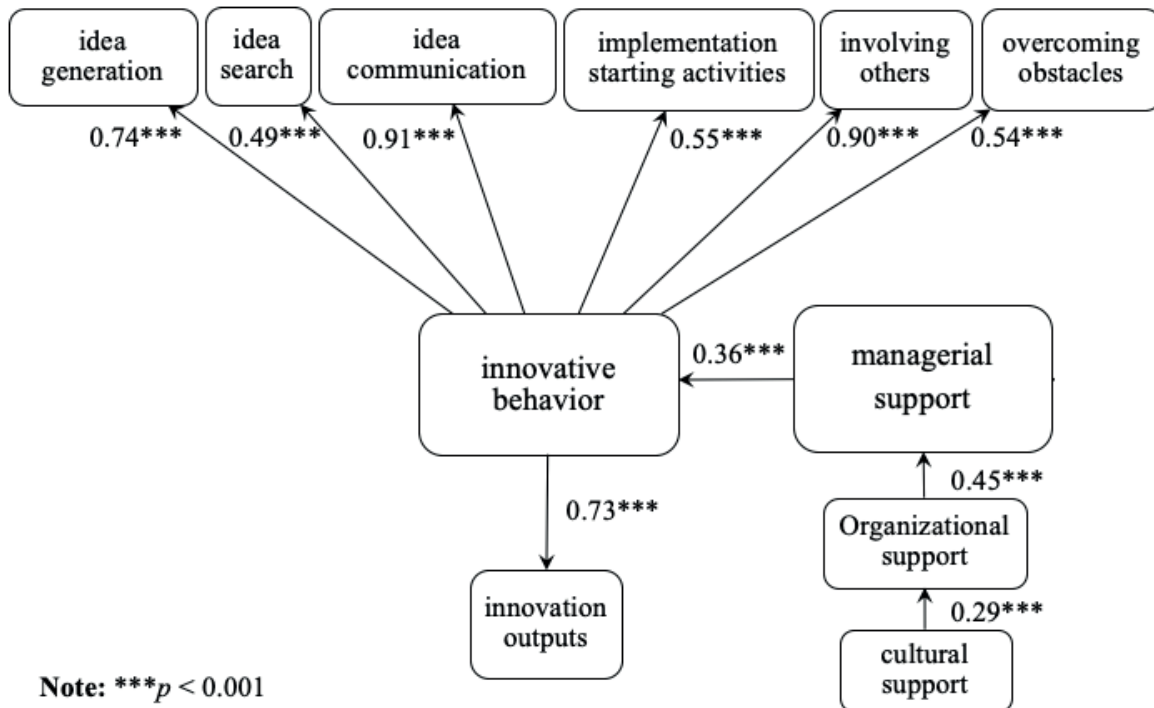


Figure 5. Lukes and Stephan’s (2017) IBI and ISI structural equation results, confirm the theoretical model. From “Measuring employee innovation,” by M. Lukes and U. Stephan, 2017, *International Journal of Entrepreneurial Behaviour & Research*, 23(1), p. 147. Copyright 2017 by the Emerald Publishing. Reprinted with permission.

Innovation Support Inventory (ISI)

Innovative support inventory (ISI) was validated in three languages to ensure applicable across cultures, diverse industry branches, and sampled in multiple countries (Lukes & Stephan, 2017). Innovation managerial support was one of three components of the Innovation Support Inventory, in which the employee self-reports how the manager supports innovation (Lukes & Stephan, 2017). The operational definition summarizes the below variable making up the average of the five questions, measured by a Likert scale of 1 to 5 (Lukes & Stephan, 2017).

The one variable, Managerial support, was comprised of the following five questions: (a) My manager motivates me to come to him/her with new ideas; (b) My manager always financially rewards good ideas; (c) My manager supports me in implementing good ideas as soon as possible; (d) My manager is tolerant of mistakes and errors during the implementation of something new; and (e) My manager is able to obtain support for my proposal also outside our department.

Validity. The ISI showed criterion (Table 1), discriminant, convergent, and factorial validity (Figure 5; Lukes & Stephan, 2017).

Reliability. The ISI showed excellent internal reliability across several studies across several cultures (Table 2; Lukes & Stephan, 2017).

Ethical Considerations

The population of the study was made up of employees who create a product. Qualtrics XM collected all data and did not provide the identity of the participants; therefore, there were no concerns with disclosing participants' identity. Ethical consideration was ensured by researchers not asking for the participant's company name, rather, asking for company size ranges and geographical location. Electronic consent to participate in the study as a qualifying

question to participate was collected. After Qualtrics XM collected the data, information identifying participants was separated from other data and not provided, in order to remove all personal identification to respect the participant's justice.

Data was stored on an encrypted universal serial bus (USB) thumb drive and locked in a secure location when not in use. Data were analyzed using a personal computer (MAC), which was password protected, and maintained with up to date firewall and antivirus software. Any printed material and electronic material were stored on a USB thumb drive and remained within a secure location for seven years after the publication of the study. After seven years, the USB thumb drive will be smashed and destroyed, and all paper material will be shredded. Future research and no other researcher can use data collected in the study.

One of the foundational reports on ethics was the *Belmont Report* (1979). The *Belmont Report* (Department of Health, Education, and Welfare, 1979) discussed the ethical considerations of research and respect for persons, beneficence, and justice. Respect for persons has two ethical considerations: Participants should be treated with respect autonomously, and participants were entitled to protection (Department of Health, Education, and Welfare, 1979). Autonomously was defined by allowing the participant the right to their opinion and respecting the opinion (Department of Health, Education, and Welfare, 1979). The study upholds respect for persons as the study was quantitative, all opinions were gathered electronically, and numerical values were provided by the participant to remove a potential violation of respect.

The second component to the *Belmont Report* (1979) was beneficence. Beneficence was defined as the researcher's obligation under two rules: first, to cause no harm and second to maximize benefits, and to minimize potential harm minimized (Department of Health, Education, and Welfare, 1979). The study assessed the employee's opinions, gathered

electronically utilizing existing instruments, and without communication with the researcher. Therefore, the study upheld the ethical consideration of beneficence.

Lastly, the *Belmont Report* (1979) discusses justice. Justice, defined as the distribution of fairness, similar participants must to be treated equivalently (Department of Health, Education, and Welfare, 1979). In the study, all participants were treated equally, with justice, as the participants all receive the same information and instruments. In summary, the study upheld the standards from the *Belmont Report* (1979) of respect for persons, beneficence, and justice.

Summary

Chapter 3 covered all aspects regarding the methodology used in the study. The chapter included the purpose of the study, research questions, hypotheses, research design, target population, and sample. In addition, procedure, resources, descriptive statistics, hypothesis testing, post hoc analysis, instruments, validity, reliability, and ethical considerations were presented.

The next chapter, Chapter 4, focuses on the study results, the background to the chapter's description, the sample, hypothesis testing, and posthoc analysis. The concluding chapter, Chapter 5, summarizes, discusses and concludes the results, limitations, implications for practice, and recommendations for further research. The chapter ends with a conclusion.

CHAPTER 4. RESULTS

Background

Chapter 4 will discuss the results of analyzing the influence transformational leadership style has on employees who innovate products, mediated by managerial support. The results were a not evaluated report of the data that was collected, including supporting visuals. The essence of Chapter 4 was analyzing and gaining answers to the research questions and defining if the hypotheses was accepted or rejected.

RQ1. To what extent does transformational leadership style relate to employee innovation behavior?

H_0 : Transformational leadership style does not relate to employee innovation behaviors.

H_a : Transformational leadership style does relate to employee innovation behaviors.

RQ2. To what extent does managerial support relate to employee innovation behavior?

H_0 : Managerial support does not predict employee innovation behaviors.

H_a : Managerial support does predict employee innovation behaviors.

RQ3. To what extent does managerial support serve as a mediating variable between transformational leadership and employee innovation behavior?

H_0 : Managerial support does not mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

H_a : Managerial support does mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

Next, the chapter will review the study sample description, hypothesis testing, and ends with a summary of the chapter. Chapter 5, the last chapter, was different from Chapter 4, as Chapter 5 will then go in detail about the research limitations, including personal insight into the interpretation of the data found in the study. Specifically, the study will be reviewed and address the problem identified and recommendations for future research studies.

Description of the Sample

Participants were U.S. based employees who create product innovation recruited through Qualtrics XM. Qualtrics XM was used to gather the population to collect a larger diverse pool of participants instead of potentially biased professional organization members or personal networks. Qualtrics XM (2019) supplies a diverse population by working with over 20 of the world's largest, most well known, strategically selected sample providers. Qualtrics (2019) actively manages market research double opt in panel samples. To help ensure valid respondents, Qualtrics (2019) uses complex, continuously improving digital fingerprinting technology and validates every IP address. All Qualtrics sampling partners use deduplication technology, hold full psycho demographic profiles, and were required to update regularly to ensure accuracy to retain the integrity and most reliable data (Qualtrics, 2019). With Qualtrics having access to such a large population, the response rate was high, and within four days, the desired sample size was achieved.

To meet a priori of 95% certainty, avoid Type I and Type II errors (Faul et al., 2007; Field, 2018), and the .15 effect size, 89 participants were needed. The study exceeded 89 participants, collecting data from a total of $N = 135$. However, through assumption analysis, 4 participants were identified as outliers. Therefore, those four were removed, ending with $N = 131$. Using the G*Power calculator and the study's final participant count ($N = 131$), anticipated

α err probability of $p = 0.05$ and medium effect size f^2 of 0.15, calculated a 99.3% Power ($1 - \beta$ err prob).

The survey was set up to stop after the first 10% of the sample size was achieved. Once the survey was stopped, all collected data were double checked to ensure the survey was set up correctly. In reviewing the initial data, Qualtrics XM allowed participants outside the criteria to participate, including those that did not consent to the research. Therefore, the initial 10% of the participants were removed. The survey was fixed to ensure participants were removed when the criteria were not met. Qualtrics XM then reissued the survey and stopped again after the first 10% completed, in which case the survey was set up correctly and approved to move forward with the remaining sample, stopping at the desired $N = 135$.

The descriptive statistics gathered for each participant were the independent variable transformational leadership style, dependent variable employee innovative behavior, and mediating variable of managerial support. Each participant provided answers to a series of questions that were connected to each variable. The three variables were used to provide a visual descriptive analysis of the sample and data for the mean and standard deviation.

Each participant provided demographic information to better understand the respondents and analyze how the survey participants compared to previous research. Of the final 131 respondents, 56% identified as female, and 93% were employed full time. The age range was a natural bell curve, with 73% within 25-44, with some younger and older. Forty-two percent have 4-year degrees and 19% a professional degree. The majority of the participants identified race as White (70%), the next largest group as Black or African American (22%), and 80% as not Hispanic or Latino/a/x. Respondents spread across 27 states, with the majority living in Florida (15%), California (11%), New York (9%), Texas (8%), and Pennsylvania (8%). 56% work in a

white collar job, 73% have a direct leader but were also a manager, and 32% work in the Manufacturing industry, 30% Business Service, 21% Information and Communication Technologies (ICT), and 5% in Trade. Lastly, the company's size also represents a bell curve, with 44% working in a company with 101-1,000 employees, 27% 1,001-10,000, and the remaining on both sides.

Hypothesis Testing

Descriptive Statistics

The descriptive statistics of the three variables were analyzed (Table 3). The independent variable transformational leadership, had a mean (M) 2.86, on a Likert scale of 0 to 4) with a standard deviation (SD) of .62. The mediating variable, managerial support, had a mean of 4.24 (on a Likert scale of 1 to 5) with a standard deviation of .63. Lastly, the dependent variable, innovation behavior, had a mean of 4.14 (on a Likert scale of 1 to 5) with a standard deviation of .52.

Table 3
Descriptive Statistics

	M	SD	N
Innovation Behavior	4.14	0.52	131
Managerial Support	4.24	0.63	131
Transformational Leadership	2.86	0.62	131

Note. M = Mean, SD = Standard Deviation, and N = Sample Size

When analyzing the descriptive statistics, transformational leadership mean was considerably lower ($M = 2.86$) than innovation behavior ($M = 4.14$) and managerial support ($M = 4.24$). However, the transformational leadership style Likert scale was rated 0-4, and innovation behavior and managerial support were rated on a scale of 1-5. All three instruments have the

lowest number equaling the lowest rating and the highest number, the best rating. Therefore, if one were to assess the same Likert scale variables, transformational leadership's mean would be one full point higher ($M = 3.86$), closer to the other two variables. Means were all within 10% of each other. When reviewing the standard deviation of all three variables, the spread of data, managerial support ($SD = .63$), and transformational leadership ($SD = .62$) were very similar, leading to the conclusion the perception of the employee's leaders were similar. However, when one analyzes all three standard deviations, the employee's self-assessment of innovation behavior ($SD = .52$) was lower (17-18%) than the two leadership assessments. A lower standard deviation indicates that the data has a narrow spread, and the participants were more consistent in responses causing variance spread to be closer.

Assumptions

Five assumptions were checked. The study has three research questions made up of two simple linear regression and one mediation analysis. The mediation analysis involves four steps and additional analysis. Therefore, the study has three total simple regression, and one multiple linear regression analysis could be completed. The five assumptions were: (a) outliers; (b) linearity of residuals; (c) normality; (d) observations are independent; and (e) homoscedasticity. All five assumptions were checked and assessed on the three simple linear regressions; (a) RQ1, also Baron and Kenny's (1986) Step One; (b) RQ2, also Baron and Kenny's (1986) Step Three; (c) Baron and Kenny's (1986) Step Two; and (d) one multiple regression analysis, Baron and Kenny's (1986) Step Four.

Outliers. Four outliers were identified through the assumption checking process, as shown in Figure 6 and Figure 7. Before reviewing all assumptions, a description of outliers will

be discussed. Once the outliers were removed, all analysis was recreated, and assumptions were rechecked.

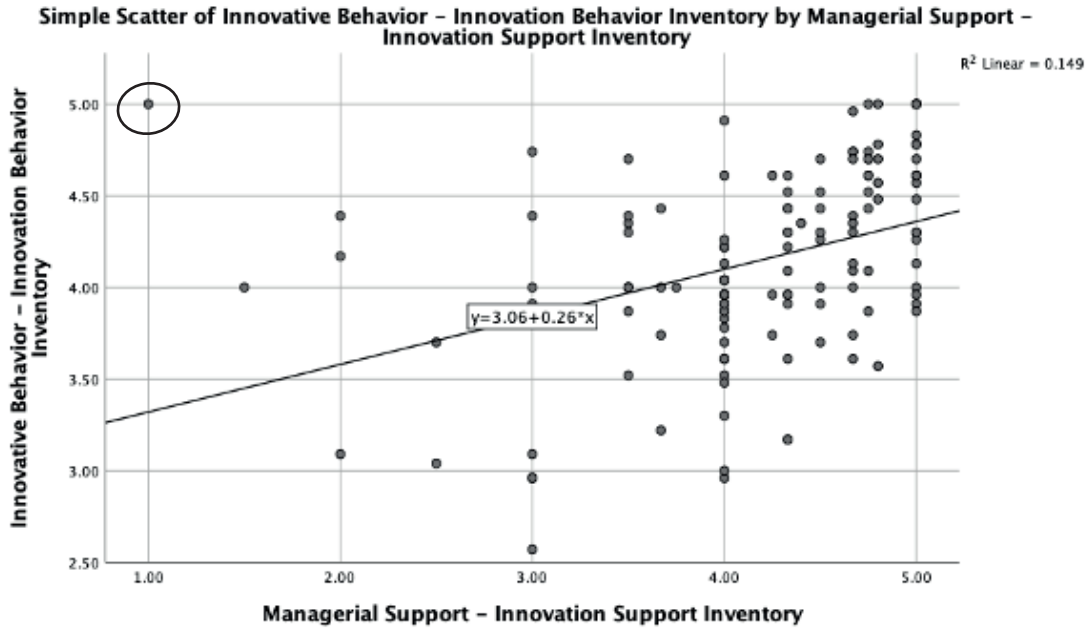


Figure 6. Test for outliers. The first outlier found was in IB and MS analysis.

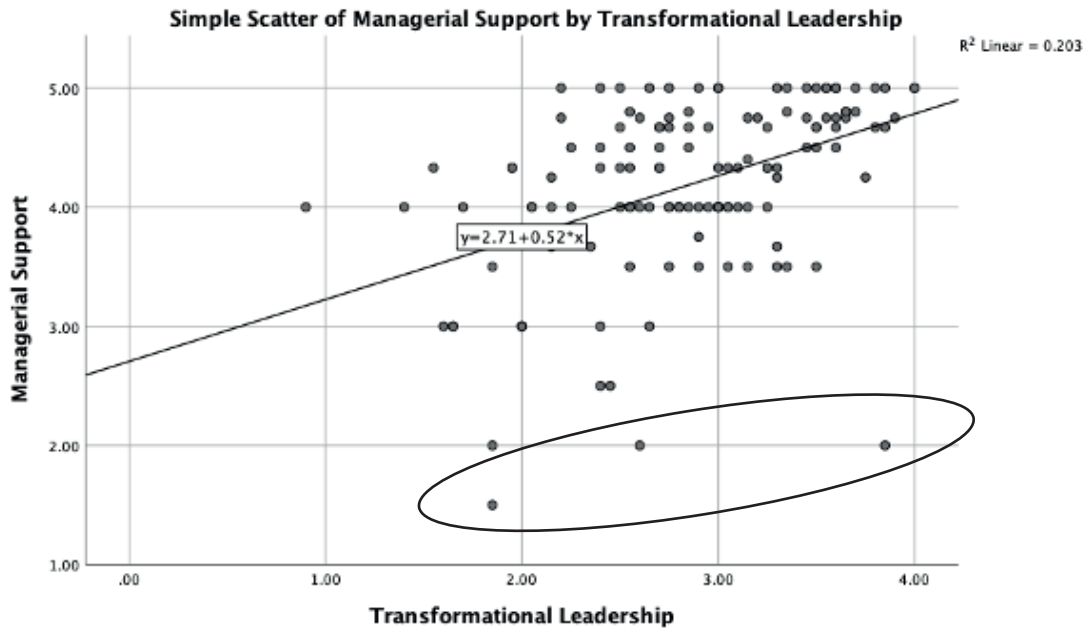


Figure 7. Test for outliers. Three more outliers were found in MS and TL analysis.

Extreme outliers were identified and removed by analyzing the residual statistics box in SPSS. The standardized residuals min/max row of data was used to analyze any outliers. Data should not exceed 3.29 or -3.29; if any exceeded these parameters, the participant's data was removed, and the process started over.

The first outlier was identified after running research question 1 and moving into research question 2 when the standard residual maximum was 3.52, which exceeds the 3.29 range that should not be exceeded. The data led to removing participant 68 ($SD = 3.52$) and rerunning the analysis (Figure 6). When the analysis was rerun for Transformational Leadership and Managerial Support, the standard residual minimum was -4.21, which led to identifying participant 11 ($SD = -3.37$), 55 ($SD = -3.20$), 74 ($SD = -4.21$) as outliers and were removed (Figure 7). All analysis was reassessed, ending with $N = 131$. Once all four outliers were removed, no other outliers were identified as standard residual minimum were all within the +/- 3.29 range (Table 4 through 7).

Table 4
RQ1 Residual Statistics

	Minimum	Maximum	<i>M</i>	<i>SD</i>	<i>N</i>
Predicted Value	3.13	4.72	4.14	.31	131
Residual	-1.16	1.04	.00	.41	131
Std. Predicted Value	-3.18	1.85	.00	1.00	131
Std. Residual	-2.82	2.53	.00	1.00	131

Note. Minimum and maximum of residual statistics, *M* = Mean, *SD* = Standard Deviation, and *N* = Sample Size.

Table 5
RQ2 Residual Statistics

	Minimum	Maximum	<i>M</i>	<i>SD</i>	<i>N</i>
Predicted Value	3.11	4.48	4.14	.29	131
Residual	-1.06	1.17	.00	.43	131
Std. Predicted Value	-3.58	1.20	.00	1.00	131
Std. Residual	-2.46	2.72	.00	1.00	131

Note. Minimum and maximum of residual statistics, *M* = Mean, *SD* = Standard Deviation, and *N* = Sample Size.

Table 6
Baron and Kenny's (1986) Step Four Residual Statistics

	Minimum	Maximum	<i>M</i>	<i>SD</i>	<i>N</i>
Predicted Value	3.15	4.76	4.14	.35	131
Std. Predicted Value	-2.83	1.80	.00	1.00	131
Std. Error of Predicted Value	.35	.13	.06	.02	131
Adjusted Predicted Value	3.16	4.75	4.13	.35	131
Residual	-1.13	1.26	.00	.38	131
Std. Residual	-2.93	3.26	.00	.99	131
Stud. Residual	-2.95	3.33	.00	1.01	131
Deleted Residual	-1.14	1.31	.00	.39	131
Stud. Deleted Residual	-3.04	3.47	.00	1.02	131
Mahal. Distance	.05	12.86	1.99	2.13	131
Cook's Distance	.00	.15	.01	.02	131
Centered Leverage Value	.00	.99	.02	.02	131

Note. Minimum and maximum of residual statistics, *M* = Mean, *SD* = Standard Deviation, and *N* = Sample Size.

Table 7
Baron and Kenny's (1986) Step Two Residual Statistics

	Minimum	Maximum	<i>M</i>	<i>SD</i>	<i>N</i>
Predicted Value	3.23	4.84	4.24	.32	131
Residual	-1.72	1.10	.00	.54	131
Std. Predicted Value	-3.18	1.85	.00	1.00	131

Note. Minimum and maximum of residual statistics, *M* = Mean, *SD* = Standard Deviation, and *N* = Sample Size.

Linearity of residuals. The linearity of residual assumption assesses the relationship between variables; the data follow a linear line proportionately. Linearity of residual assumption was checked by reviewing the scatterplot in SPSS. A regression line was added to the scatterplot. Data along the regression line was reviewed, and if data formed an unusual shape, apart from the regression line, then linearity was violated. If data followed the regression line, then linearity was achieved. Linearity assumption was achieved after the outlier analysis as all data followed along the regression line (Figure 8 through 11).

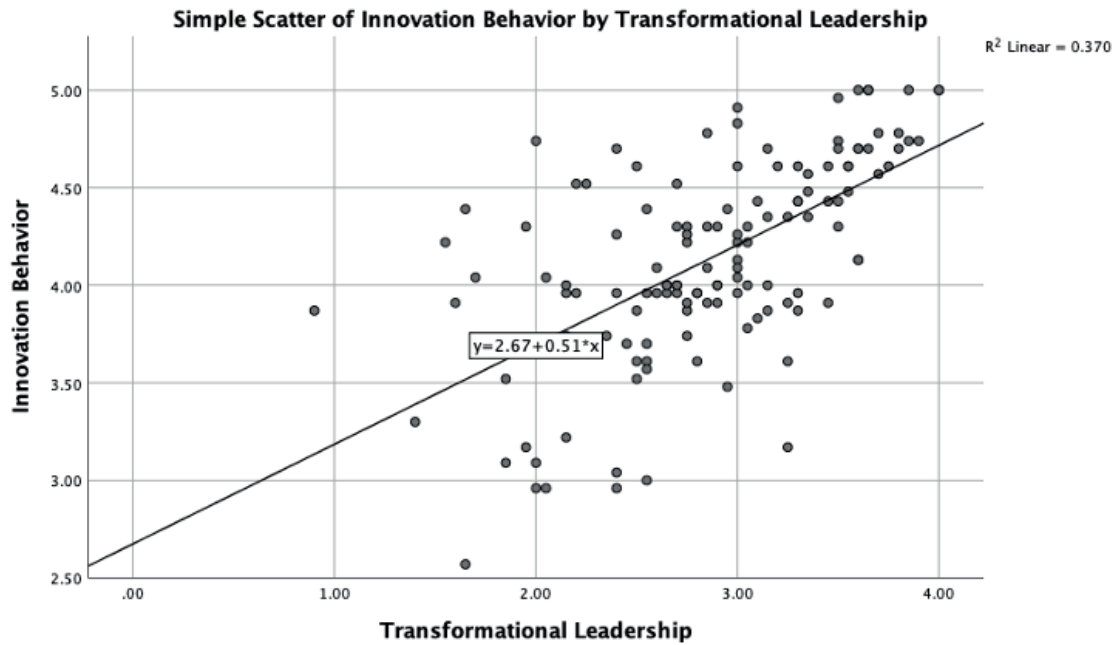


Figure 8. RQ1 Scatterplot with regression line to assess the linearity of residuals.

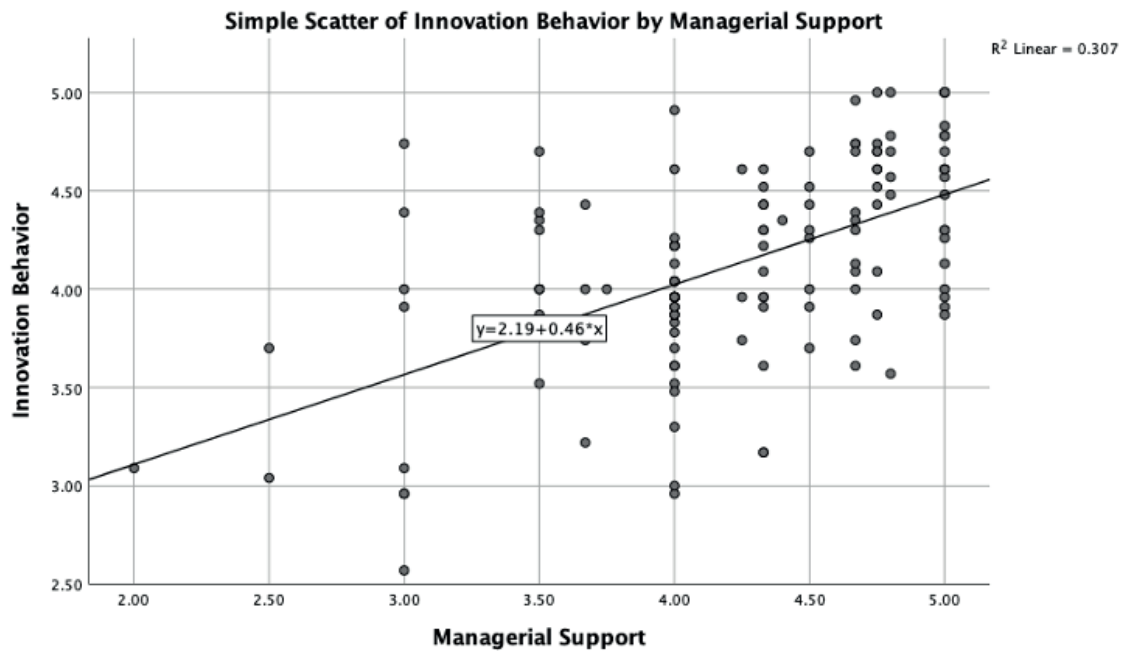


Figure 9. RQ2 Scatterplot with regression line to assess the linearity of residuals.

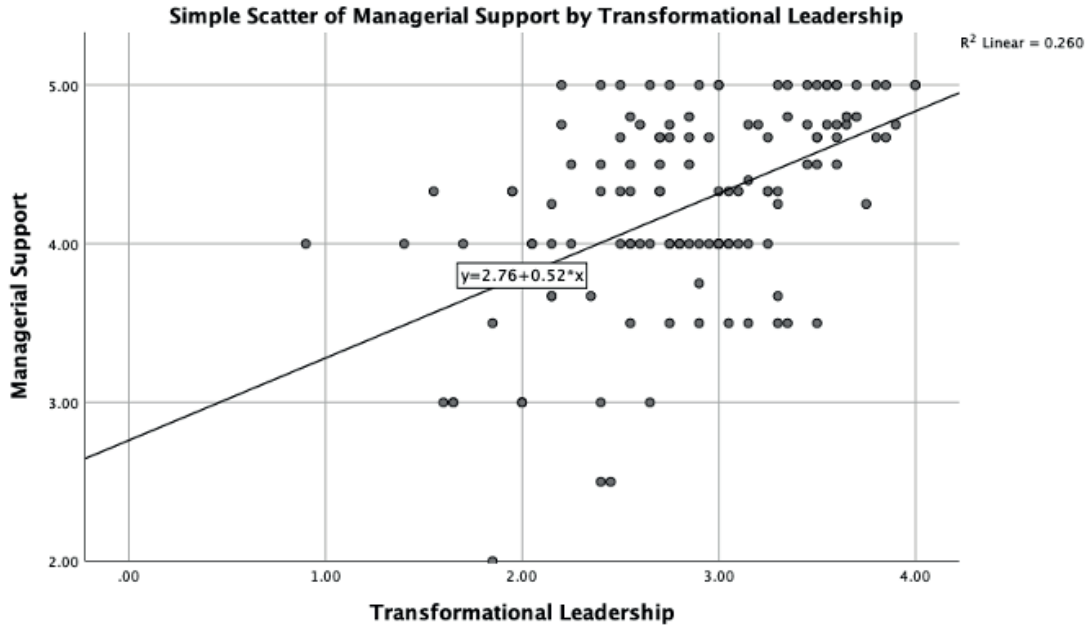


Figure 10. Baron and Kenny's (1986) step two scatterplot with the regression line to assess residuals' linearity.

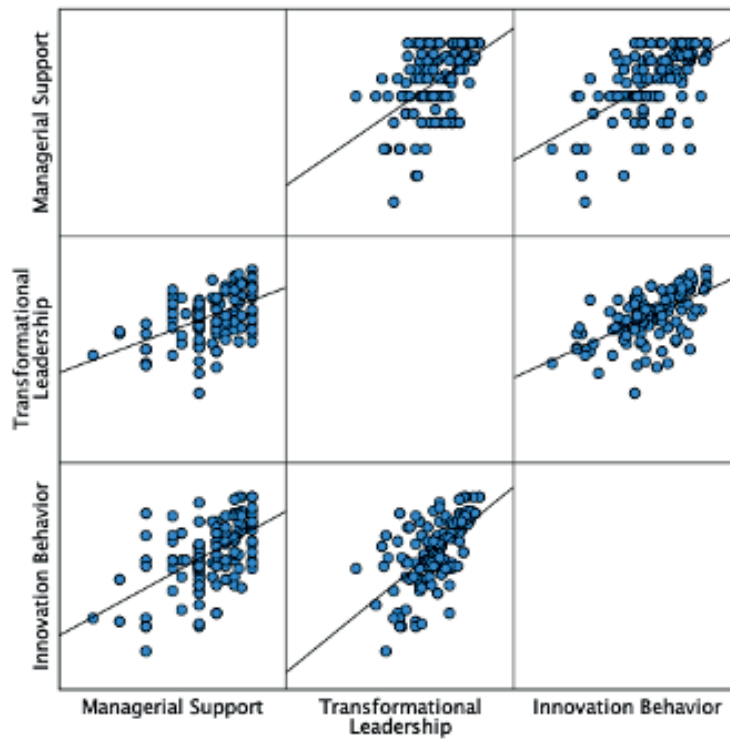


Figure 11. Baron and Kenny's (1986) step four multiple scatter plot with a regression line to assess residuals' linearity.

Normality. A normal probability plot (P-P Plot, in SPSS) was created to see if all data and residuals were normally distributed. If data points followed the P-P Plotline, then residuals were normally distributed. SPSS also created a Histogram to check for normality; the histogram curve was reviewed to observe if data followed the curve. If data followed the curve, then the residuals were normally distributed. Conversely, if data did not follow the P-P Plotline, or along the histogram curve, the residuals were abnormally distributed. Normality was also met as all data residuals in the four analyses were normally distributed in reviewing the P-P Plot, and the data followed the histogram curve (Figure 12 through 19).

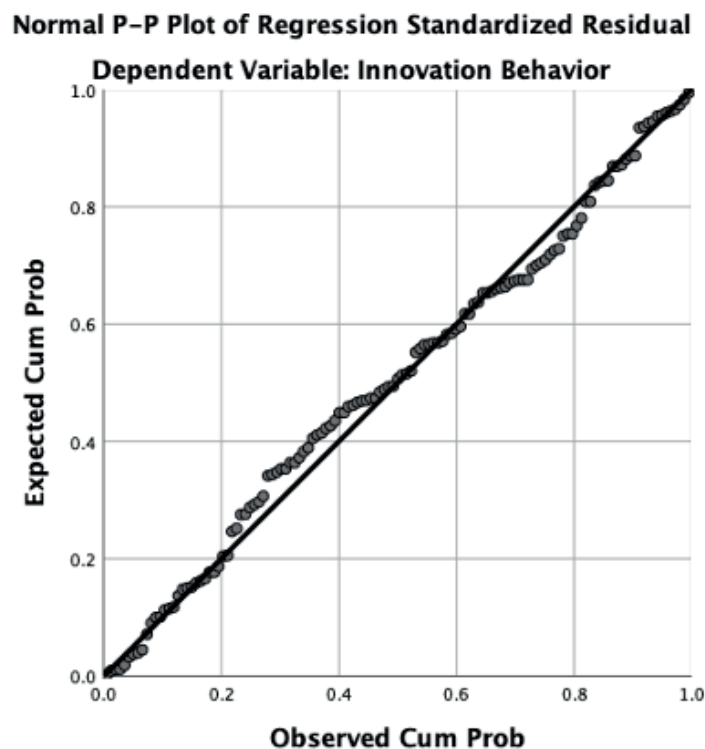


Figure 12. RQ1 Normal P-P Plot to assess the normality of residuals.

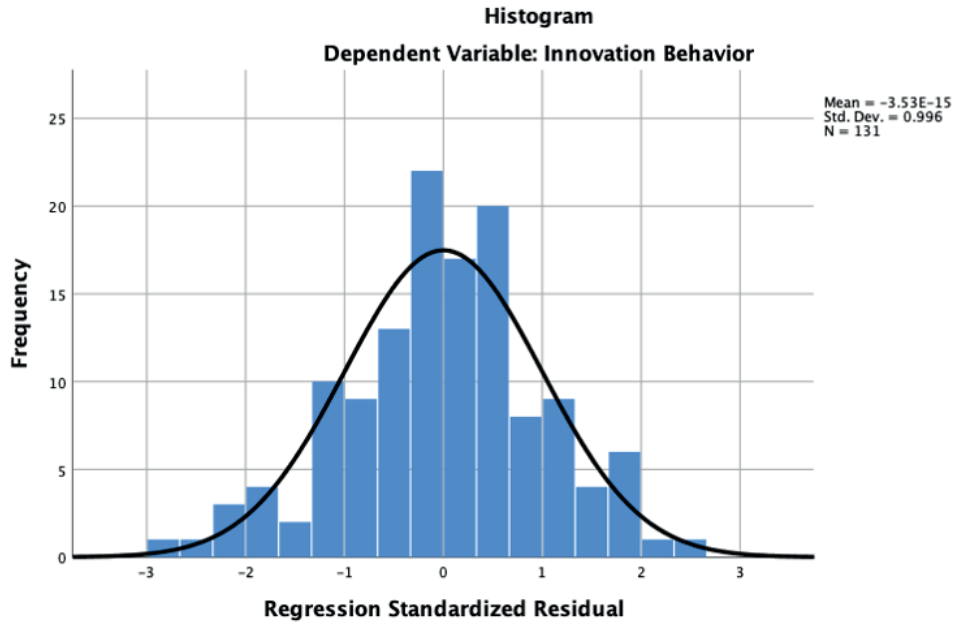


Figure 13. RQ1 Histogram to assess the normality of residuals.

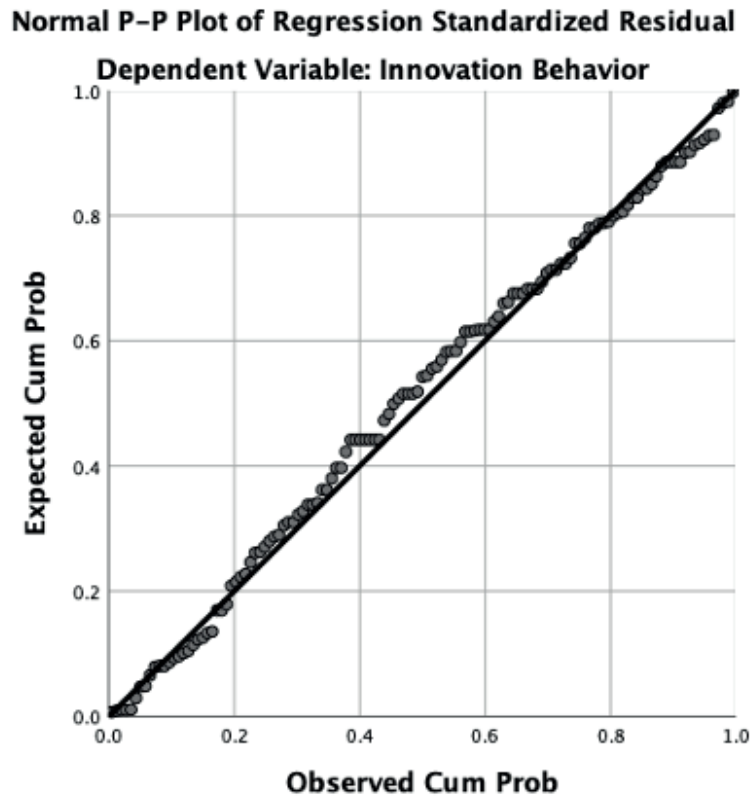


Figure 14. RQ2 Normal P-P Plot to assess the normality of residuals.

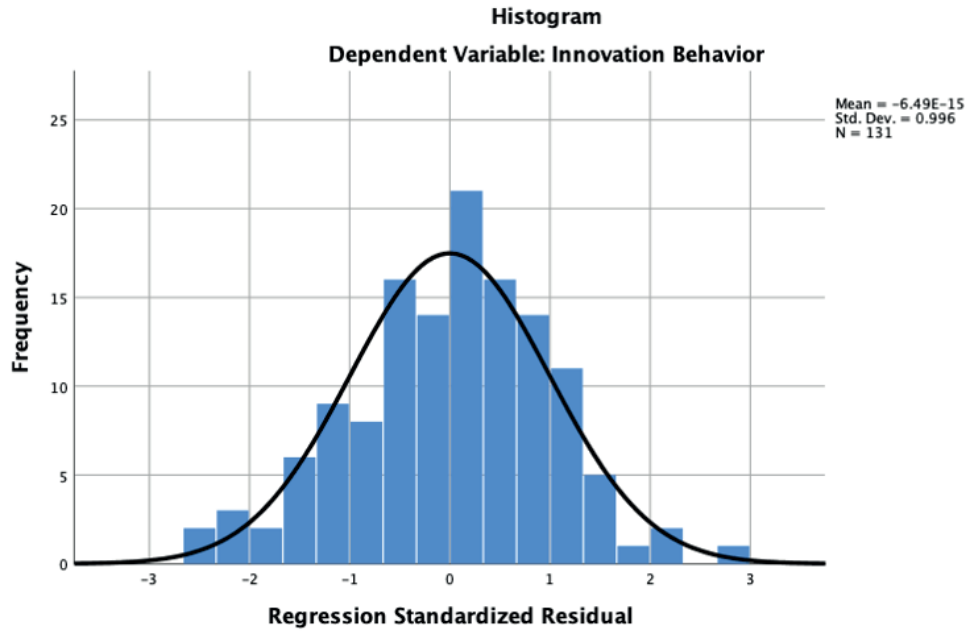


Figure 15. RQ2 Histogram to assess the normality of residuals.

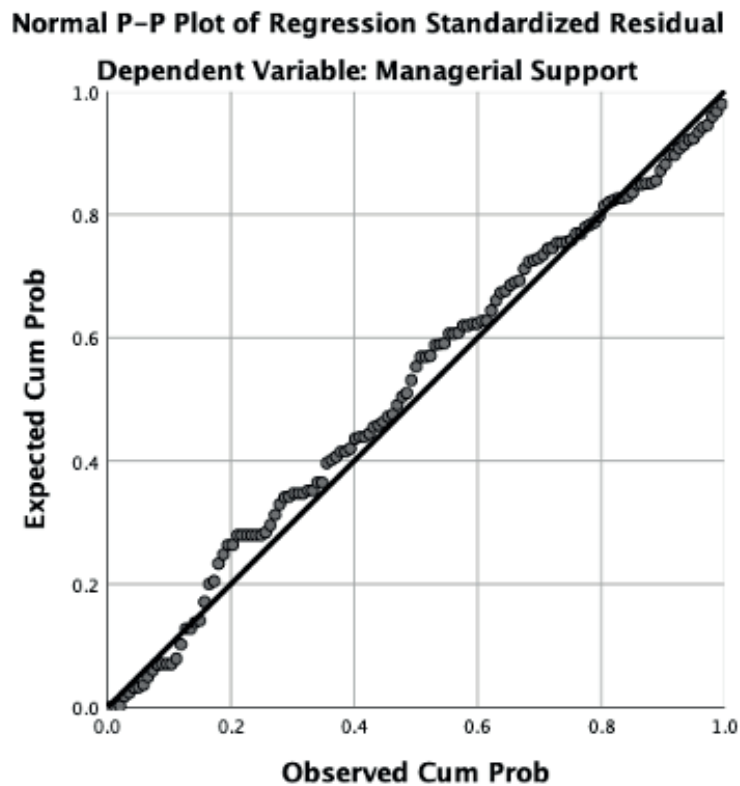


Figure 16. Baron and Kenny's (1986) step two standard P-P Plot to assess the normality of residuals.

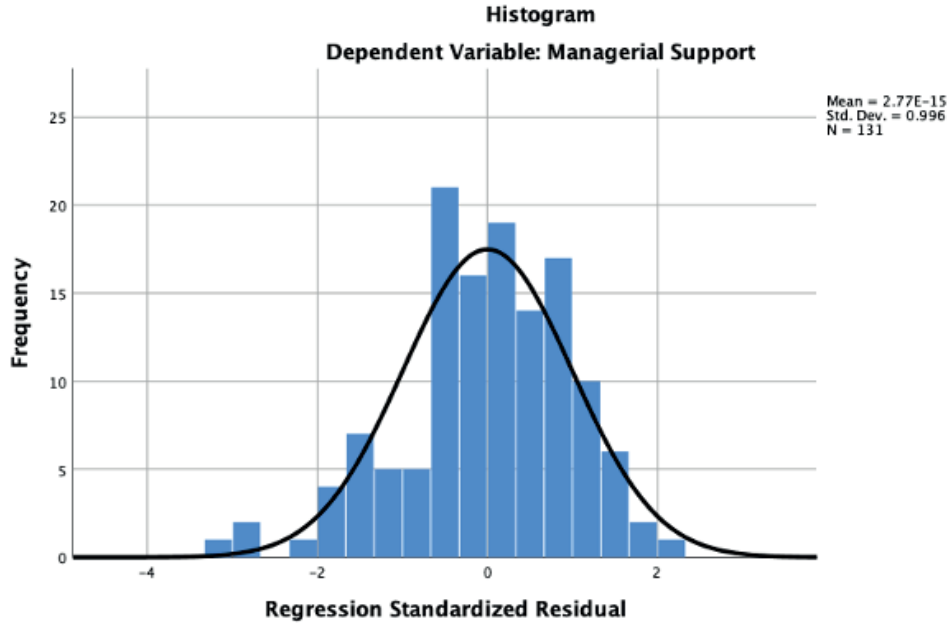


Figure 17. Baron and Kenny's (1986) step two Histogram to assess the normality of residuals.

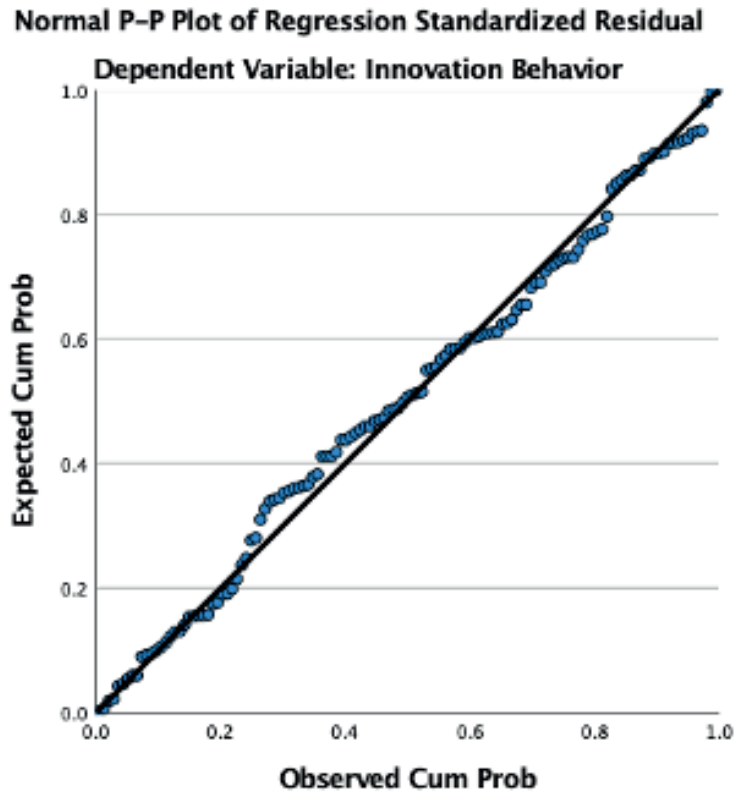


Figure 18. Baron and Kenny's (1986) step four standard P-P Plot to assess the normality of residuals.

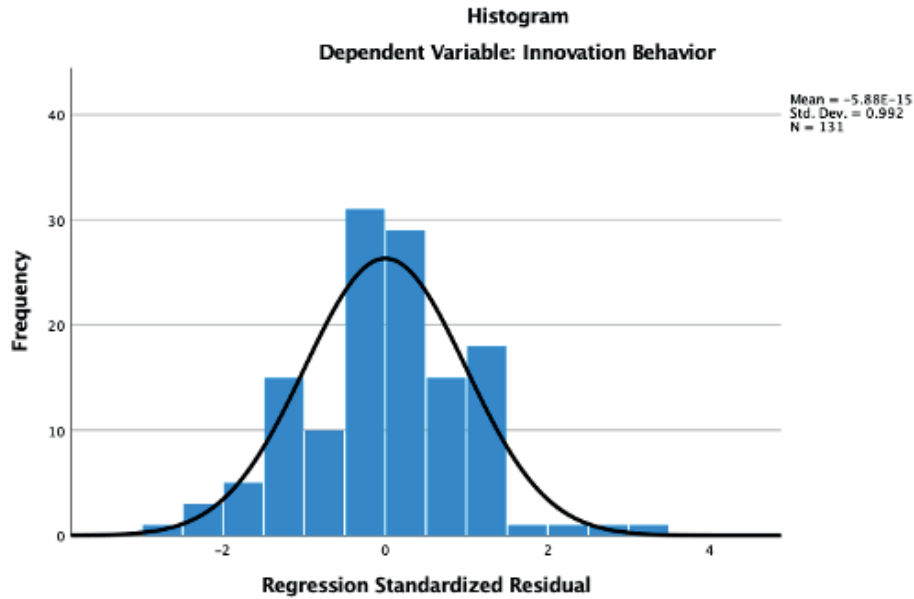


Figure 19. Baron and Kenny’s (1986) step four Histogram to assess the normality of residuals.

Observations are independent. Residual errors were independent, not autocorrelated.

Observations of independence were checked using the Durban Watson test for independence of errors, 0-4, and should have been close to 2. Less than 1 or greater than 3 were violations. Using the Durban Watson test, observations of independence were also close to the desired measurement of 2 for all analyses (Table 8 through 11) and within the acceptable range.

Table 8
RQ1 Model Summary

	<i>R</i>	r^2	Adj <i>R</i> Square	<i>SEM</i>	Durbin-Watson
DV IB and IV TL	.61	.37	.37	.41	1.93

Note. *R* = correlation coefficient, r^2 = coefficient of determination, measure of strength of relationship, Adj. *R* Square = goodness of fit when multiple independent variables, and *SEM* = Standard error of the mean, Durbin-Watson = Observation of independence test.

Table 9
RQ2 Model Summary

	<i>R</i>	r^2	Adj <i>R</i> Square	<i>SEM</i>	Durbin-Watson
DV IB and IV MS	.55	.31	0.30	0.43	1.86

Note. *R* = correlation coefficient, r^2 = coefficient of determination, measure of strength of relationship, Adj. *R* Square = goodness of fit when multiple independent variables, and *SEM* = Standard error of the mean, Durbin-Watson = Observation of independence test.

Table 10

Baron and Kenny's (1986) Step Two Model Summary

	<i>R</i>	r^2	Adj <i>R</i> Square	<i>SEM</i>	Durbin-Watson
DV MS and IV TL	.51	.26	.25	.54	1.92

Note. *R* = correlation coefficient, r^2 = coefficient of determination, measure of strength of relationship, Adj. *R* Square = goodness of fit when multiple independent variables, and *SEM* = Standard error of the mean, Durbin-Watson = Observation of independence test.

Table 11

Baron and Kenny's (1986) Step Four Model Summary

	<i>R</i>	R^2	Adj <i>R</i> Square	<i>SEM</i>	Durbin-Watson
DV IB, MV MS and IV TL	.67	.45	.44	.39	1.98

Note. *R* = correlation coefficient, r^2 = coefficient of determination, measure of strength of relationship, Adj. *R* Square = goodness of fit when multiple independent variables, and *SEM* = Standard error of the mean, Durbin-Watson = Observation of independence test.

Homoscedasticity. A review of residual error variance was completed to ensure the same across all the independent variable values. The scatterplot of standardized residual errors was analyzed against independent errors to check for homoscedasticity. Observed data to be similarly distributed along the scatterplot line. Homoscedasticity was also achieved for all analysis when the scatter plot of standardized residual errors was reviewed against independent errors that were similarly distributed along the plotline (Figure 20 through 23). Therefore, all five assumptions were met for the four analyses.

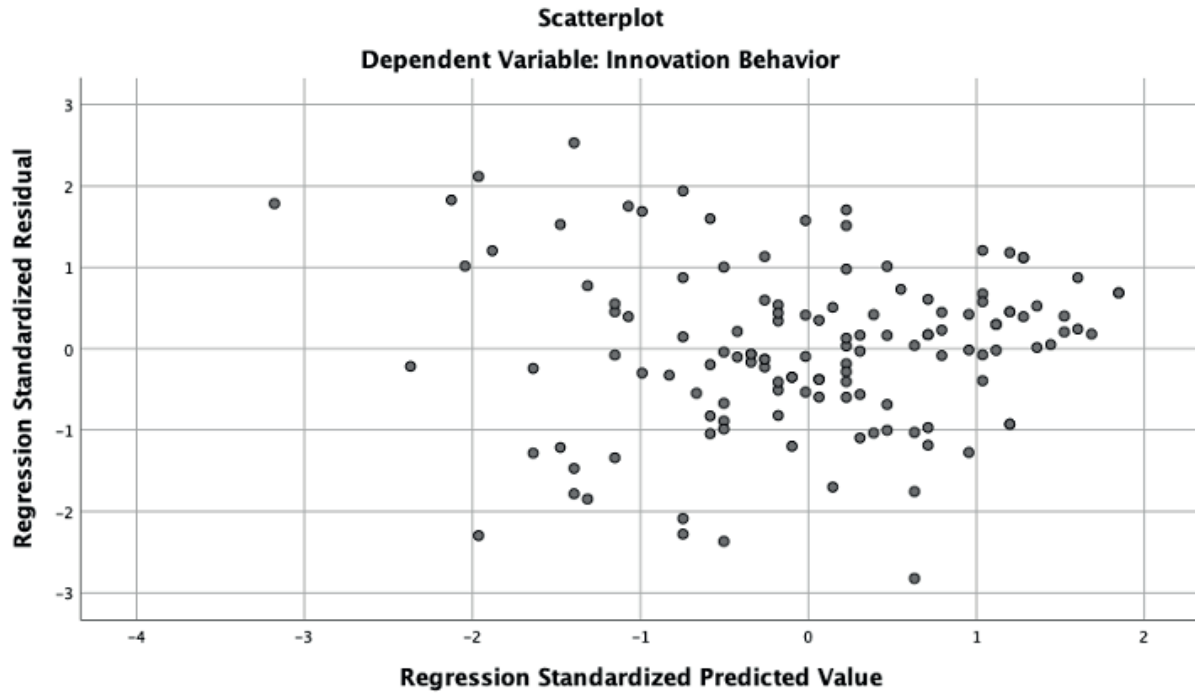


Figure 20. RQ1 Scatterplot of standardized residuals to assess for homoscedasticity.

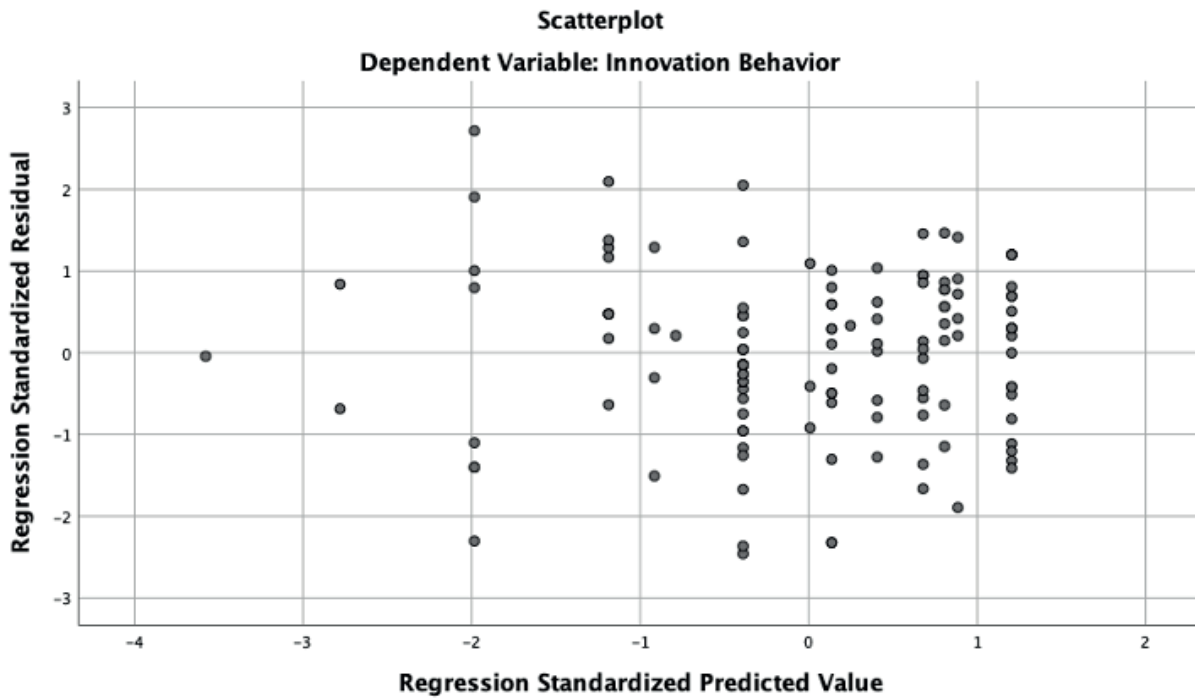


Figure 21. RQ2 Scatterplot of standardized residuals to assess for homoscedasticity.

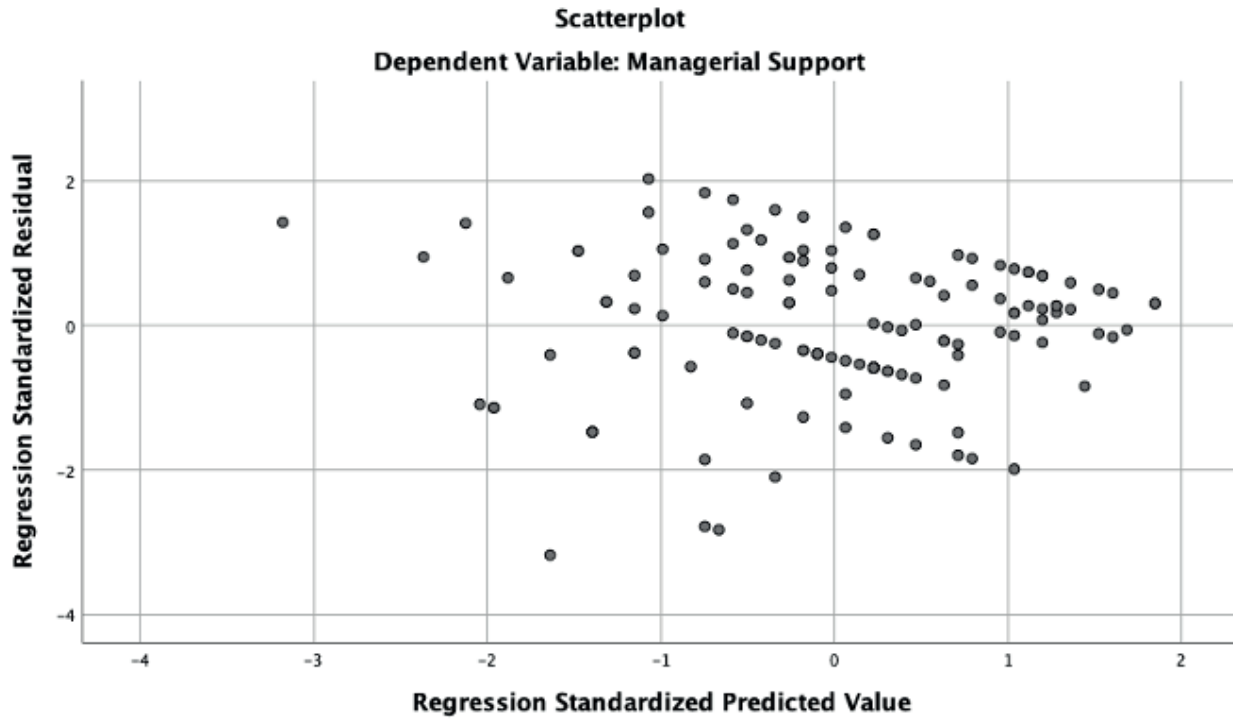


Figure 22. Baron and Kenny's (1986) Step Two Scatterplot of standardized residuals to assess for homoscedasticity.

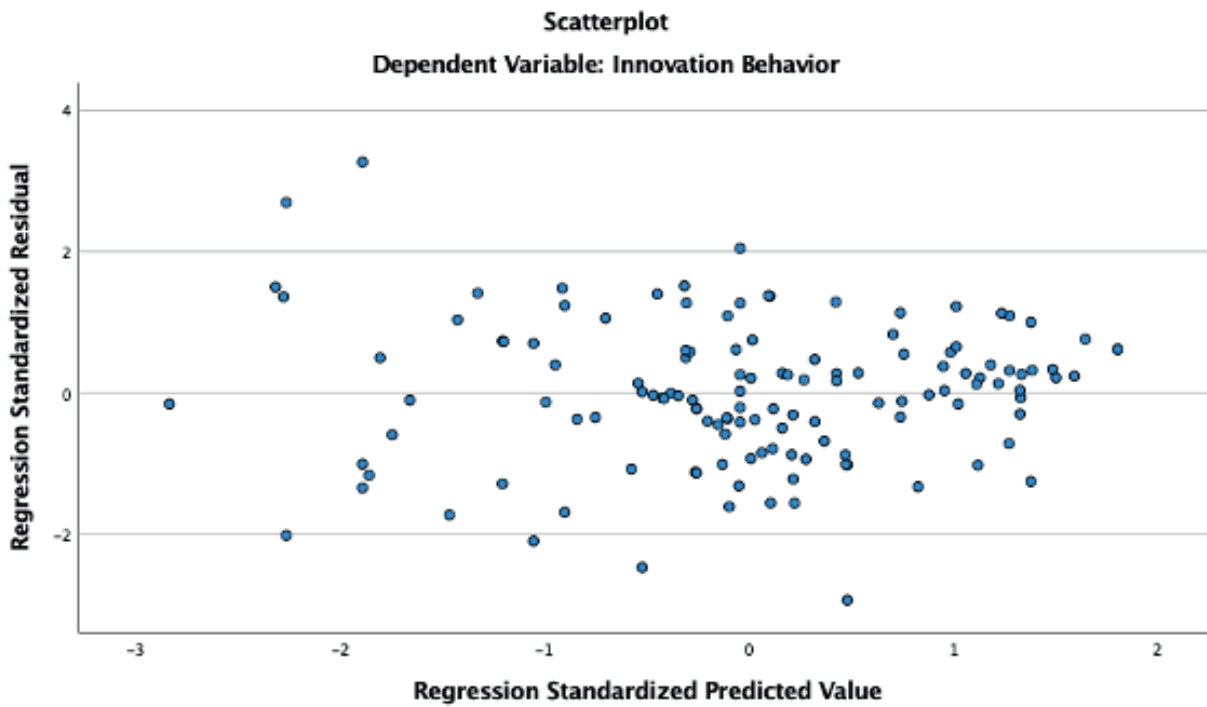


Figure 23. Baron and Kenny's (1986) Step Four Scatterplot of standardized residuals to assess for homoscedasticity.

Simple Linear Regression

RQ1. To what extent does transformational leadership style relate to employee innovation behavior? A simple linear regression analysis was conducted to examine how well an employee's leader's transformational leadership style could predict employee innovation behavior.

First, a scatterplot was created to ensure some semblance of a linear relationship between the two variables, which resulted in a positive relationship and did not reveal any new outliers (Figure 8). When interpreting the output, the correlation between innovation behavior and transformational leadership was statistically significant, $F(1, 129) = 75.76, p < .000$, with an $r^2 = .37$ (Table 8 and 12). The regression model was also significant, meaning the model with transformational leadership as the IV was significantly better than using the mean without transformational leadership in the model, therefore, the model works (Table 12). The model also explains 37% of the variability in the dataset (12.88/34.81) where the residuals explain 63% (Table 12).

Table 12
RQ1 ANOVA

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	12.88	1	12.88	75.76	0.00
Residual	21.93	129	.17		
Total	34.81	130			

Note. Sum of Squares = Sum of squares for errors, the difference in group means, *df* = degrees of freedom, Mean Square = estimates of variance, *F* = *F*-value was mean square regression divided by the mean square residual, Sig. = Significance of the study.

The regression equation for predicting the innovation behavior from transformational leadership was $y = 2.675 + 0.511x$ (Table 13). The r^2 for the equation was .370 (Table 7), or

37.0% of the variance in innovation behavior was predictable from the transformational leadership style, a moderately strong relationship. The bootstrapped 95% confidence interval for the slope to predict innovation behavior from transformational leadership was .394 (Table 13); thus, for each one unit increase of transformational leadership style, employee innovation increases by .394 points. Lastly, the variables moderately positively correlate .61 (Table 14). Therefore, the null hypothesis was rejected, and the alternate hypothesis, H_a : Transformational leadership style does relate to employee innovation behaviors, was accepted.

Table 13
RQ1 Coefficients

	unstandardized coefficients		Standardized coefficient	<i>t</i>	Sig.	95% Conf Interval for <i>B</i> Lower
	<i>B</i>	<i>SEM</i>	<i>B</i>			
(Constant)	2.675	.17		15.59	.00	2.335
Transformational Leadership	.511	.06	.608	8.70	.00	.394

Note. Unstandardized coefficient of *B* = *beta* and *SEM* = Standard error of mean, Standardized coefficient of *B* = *Beta*, *t* = *t*-test, Sig. = Significance, and 95% Confidence interval for *B* lower = lower (95%) confidence limit for the mean.

Table 14
RQ1 Correlations

		Innovation Behavior	Transformational Leadership
Pearson Correlation	Innovation Behavior	1.00	.61
	Transformational Leadership	.61	1.00
Sig. (1 – tailed)	Innovation Behavior	.	.00
	Transformational Leadership	.00	.
N	Innovation Behavior	131	131
	Transformational Leadership	131	131

Note. Pearson Correlation = Coefficient ranging from +1 to -1 with 0 meaning no association between variables, Sig. (1 – tailed) = Statistical test with critical distribution was one sided, N = Sample size.

RQ2. To what extent does managerial support relate to employee innovation behavior?

Another simple linear regression analysis was conducted to examine how well an employee's leader's transformational leadership style could predict employee innovation behavior.

First, a scatterplot was created to ensure we have some semblance of a linear relationship between the two variables, which resulted in a positive relationship and did not reveal any new outliers (Figure 9). When interpreting the output, the correlation between innovation behavior and transformational leadership was statistically significant, $F(1, 129) = 57.25, p < .000$, with an $r^2 = .31$ (Table 9 and 15). The regression model was also significant, meaning the model with managerial support as the IV was significantly better than using the mean; without managerial support in the model, the model works (Table 15). The model also explains 31% of the variability in the dataset (10.70/34.81) where the residuals explain 69%, not ideal however still significant (Table 15)

The regression equation for predicting the innovation behavior from transformational leadership was $y = 2.194 + 0.457x$ (Table 19). The r^2 for the equation was 0.31 (Table 9), or 30.7% of the variance in innovation behavior was predictable from the transformational leadership style, a moderately strong relationship. The bootstrapped 95% confidence interval for the slope to predict innovation behavior from transformational leadership was 0.338 (Table 15); thus, for each one unit increase of transformational leadership style, employee innovation increases 0.338 points. Lastly, the variables moderately positively correlate .55 (Table 17). Therefore, the null hypothesis was rejected, and the alternate hypothesis, H_a : Managerial support does predict employee innovation behaviors, was accepted.

Table 15
RQ2 ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.70	1	10.70	57.25	0.00
Residual	24.11	129	.19		
Total	34.81	130			

Note. Sum of Squares = Sum of squares for errors, the difference in group means, *df* = degrees of freedom, Mean Square = estimates of variance, *F* = *F*-value was mean square regression divided by the mean square residual, Sig. = Significance of the study

Table 16
RQ2 Coefficients

	unstandardized coefficients		Standardized coefficient	<i>t</i>	Sig.	95% Conf Interval for
	<i>B</i>	<i>SEM</i>	<i>B</i>			<i>B</i> Lower
(Constant)	2.194	.26		8.46	.00	1.680
Managerial Support	.457	.06	.55	7.57	.00	.338

Note. Unstandardized coefficient of *B* = *beta* and *SEM* = Standard error of mean, Standardized coefficient of *B* = *Beta*, *t* = *t*-test, Sig. = Significance, and 95% Confidence interval for *B* lower = lower (95%) confidence limit for the mean.

Table 17
RQ2 Correlations

		Innovation Behavior	Managerial Support
Pearson Correlation	Innovation Behavior	1.00	.55
	Managerial Support	.55	1.00
Sig. (1 – tailed)	Innovation Behavior	.	.00
	Managerial Support	.00	.
N	Innovation Behavior	131	131
	Managerial Support	131	131

Note. Pearson Correlation = Coefficient ranging from +1 to -1 with 0 meaning no association between variables, Sig. (1 – tailed) = Statistical test with critical distribution was one sided, N = Sample size.

Baron and Kenny's Mediation Analysis

Baron and Kenny's (1986) process analysis to estimate simple mediation was used to measure the mediation effect, partial effect, or lack of effect for research question 3. Baron and Kenny's (1986) four steps were used to analyze the mediating variable. Steps one, two, and three

were simple linear regression analysis, and Step four was a multiple regression analysis (Figure 24).

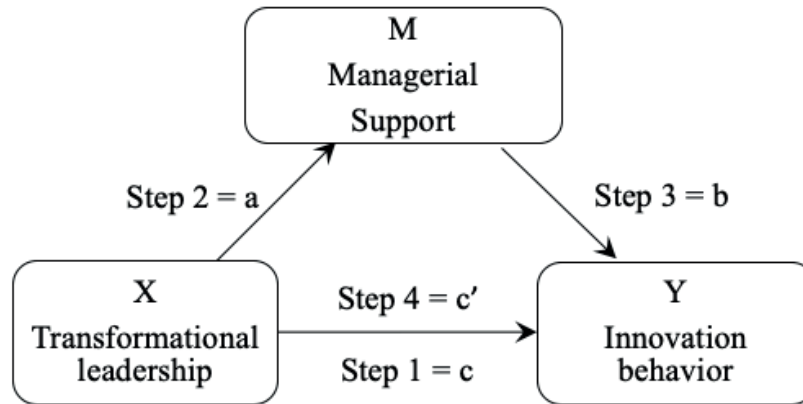


Figure 24. The four-step process for Baron and Kenny's (1986) mediation analysis.

Step one, simple linear regression analysis was completed to investigate the relationship between the independent variable, transformational leadership style, and the dependent variable, innovation behavior. Step one was also RQ1; therefore, the assumptions have already been met, and the unstandardized coefficient, beta, that was used for Baron and Kenny's (1986) simple mediation analysis, .511, with a significant impact (Table 13).

Step two, simple linear regression analysis was completed to investigate the relationship between the independent variable, transformational leadership style, and the mediating variable, managerial support. Step two was not one of the study's research questions; therefore, before the simple linear regression analysis was run, assumptions were checked. The data were reviewed to gather the unstandardized coefficient, beta, used for Baron and Kenny's (1986) simple mediation analysis, .519 with a significant impact (Table 18).

Step three, simple linear regression analysis was completed to investigate the relationship between the mediating variable, managerial support, and the dependent variable,

innovation behavior. Step three was also RQ2; therefore, the assumptions have already been met above. The unstandardized coefficient, beta, was .272 with a significant impact (Table 19).

Table 18
Baron and Kenny's (1986) Step Two Coefficients

	unstandardized coefficients		Standardized coefficient	<i>t</i>	Sig.	95% Conf Interval for
	<i>B</i>	<i>SEM</i>	<i>B</i>			<i>B</i> Lower
(Constant)	2.761	.23		12.25	.00	2.315
Transformational Leadership	.519	.08	.510	6.73	.00	.366

Note. Unstandardized coefficient of *B* = beta and *SEM* = Standard error of mean, Standardized coefficient of *B* = Beta, *t* = *t*-test, Sig. = Significance, and 95% Confidence interval for *B* lower = lower (95%) confidence limit for the mean.

Table 19
Baron and Kenny's (1986) Step Four Coefficients

	un-standardized coefficients		Std. co-efficient	<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>		Correlations			Collinearity Statistics	
	<i>B</i>	<i>SEM</i>	<i>B</i>			Low	Up	Zero-order	Partial	Part	Tol	<i>VIF</i>
(Constant)	1.923	.24		8.13	.00	1.455	2.391					
MS	.272	.06	.330	4.34	.00	.148	.397	.55	.36	.28	.74	1.35
TL	.369	.06	.440	5.78	.00	.243	.496	.61	.46	.38	.74	1.35

Note. Unstandardized coefficient of *B* = beta and *SEM* = Standard error of mean, Standardized coefficient of *B* = Beta, *t* = *t*-test, Sig. = Significance, and 95% Confidence interval for *B* low/up = lower/upper (95%) confidence limit for the mean, Zero-order = correlation where no factor was controlled, Partial = correlation after linear effect removed from IV and DV, Part = correlation after linear effect removed from IV only, Collinearity Statistics Tol. = tolerance, and *VIF* = variance inflation factor .

Step four, standard linear multiple regression analysis to investigate the relationship between the independent, mediating, and dependent variables was completed. In addition to the five assumptions discussed, unique to multiple regression versus single regression, were reviewing and analyzing multicollinearity. When analyzing the correlation matrix to check for multicollinearity, no violations were present as both analyses indicate low correlation, innovation behavior, managerial support was .55, and innovation behavior and transformational leadership

was .61 (Table 19). When analyzing for multicollinearity, both variables have a variance inflation factor (VIF) score of 1.351, well below ten, and tolerance of .740 (Table 19), which was greater than the goal .2. Therefore, all assumptions were met. When interpreting the step four output, the unstandardized coefficient, the beta was $B = .369$ (Table 19) with a significant impact.

Step 4 analyzes the relationship of the independent to the dependent variable when controlled by the mediation variable. A significant impact was achieved between variables; however, there was a reduction in beta between step one, $B = .511$, and step four, $B = .369$ (Figure 25), which means managerial support partially mediates the relationship. Therefore, for RQ3, the null hypothesis was rejected, and accept the alternate hypothesis, H_a : Managerial support does mediate the relationship between a leader’s level of transformational leadership and employee innovation behaviors.

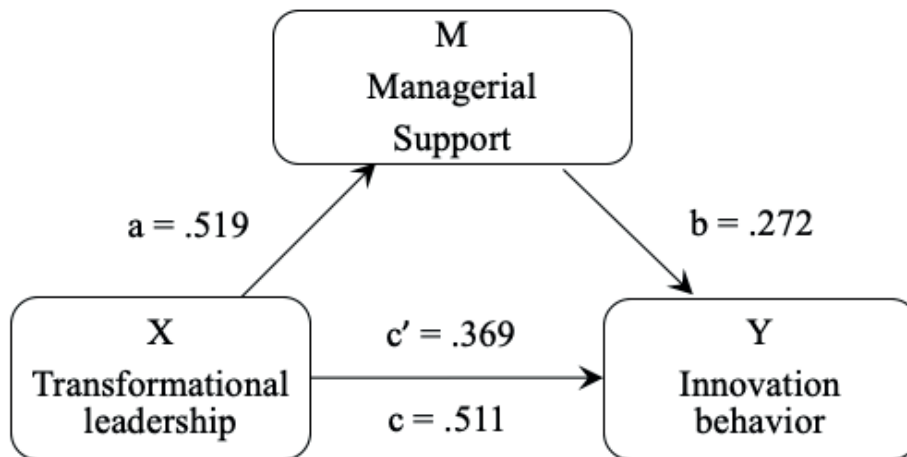


Figure 25. Results of Baron and Kenny’s (1986) mediation analysis of the study.

Table 20
Baron and Kenny's (1986) Step Four Correlations

		Innovation Behavior	Managerial Support	Transformational Leadership
Pearson Correlation	Innovation Behavior	1.00	.55	.61
	Managerial Support	.55	1.00	.51
	Transformational Leadership	.61	.51	1.00
Sig. (1 – tailed)	Innovation Behavior	.	.00	.00
	Managerial Support	.00	.	.00
	Transformational Leadership	.00	.00	.
N	Innovation Behavior	131	131	131
	Managerial Support	131	131	131
	Transformational Leadership	131	131	131

Note. Pearson Correlation = Coefficient ranging from +1 to -1 with 0 meaning no association between variables, Sig. (1 – tailed) = Statistical test with critical distribution was one sided, N = Sample size.

Summary of the Hypothesis Testing

A simple linear regression analysis was used to validate existing research and understand the relationship between variables and answer RQ1 and RQ2. Baron and Kenny's (1986) approach to analyzing mediation was used to answer RQ3. All assumptions were met within all analysis, all analysis showed significance, and all three alternate hypotheses were accepted.

H1_a: Transformational leadership style does relate to employee innovation behaviors.

Employee innovation behavior significantly predicted transformational leadership style, $F(1, 129) = 75.76, p < .000$, with an $r^2 .37$

H2_a: Managerial support does predict employee innovation behaviors.

Employee innovation behavior significantly predicted managerial support, $(F(1, 129) = 57.25, p < .000)$, with an $r^2 .31$

H3_a: Managerial support does mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

Managerial support partially mediates transformational leadership and employee innovation behavior. A reduction in beta between step one, .511, and step four, .369 led to partial mediation.

The analysis revealed a partial mediating relationship of managerial support between transformational leadership and innovation behavior. For complete mediation, step four would have been 0; however, if step 4 has a reduction in absolute size, the result was partial mediation, as seen in the study.

Summary

Chapter 4 discussed the results. The not evaluated report of the collected data included supporting visuals from the study. The chapter reviewed the background with a refresher of the research questions and hypotheses for the study. Finally, the chapter reviewed the study sample and hypothesis testing description, including the summary of the test, all assumptions were met, all analyses showed significance, and all three alternate hypotheses were accepted. Managerial support was identified as a partial mediating variable between transformational leadership and innovation behavior.

Chapter 5, the last chapter, will detail the research limitations, including personal insight into the study's data interpretation. Specifically, the chapter will discuss if the study addresses the problem identified and recommendations for future research studies.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Chapter 5, the last chapter, will provide personal interpretation and insight into the analysis. The quantitative simple linear regression and Baron and Kenny's (1986) simple mediation study summarize how managerial support added to the casual chain between transformational leadership and innovation behavior. Chapter 5 will also discuss the study results, which will include personal interpretation of what the study means, both practical and theoretical implications. The conclusion will follow, covering the focus on what the results will add to previous literature and the broader field of business management. Next, limitations were reviewed and how limitations impacted and influenced the study. Lastly, implications the study will have for practice, recommendations for future research will be discussed, and wrap up the study with a conclusion.

Summary of the Results

The study was founded on the research problem of existing research literature unclear of the mechanism by which leadership styles affect employee innovation behaviors. The significance of the topic was essential in business. The research results will guide leaders on the mediating role of managerial support, helping leaders understand the explanatory relationship on employee innovation behavior and clarifying for leaders what managers could do to influence employee innovation behavior. Much research (Gruber et al., 2015; Kuo-Chih et al., 2014; Weyrauch & Herstatt, 2016) has proven the significance of innovation in business, but little

research exists on how to be a leader of innovators, studies explicitly addressing how the employees' perception were underdeveloped.

Various themes of research emerged: the importance of innovation to business (Gruber et al., 2015), leadership as essential to innovation (Cheng et al., 2017), and the skills and behaviors necessary to drive innovation (Eggers & Kaul, 2018). The study used the various themes to find the gap the study solved. However, existing research does not address the mechanism by which leadership styles affect employee innovation behaviors until the study.

The research design was quantitative and nonexperimental, using simple linear regression analysis to investigate whether there was a statistically significant explanatory relationship between the predictor and the outcome variables to answer RQ1 and RQ2. RQ3 was analyzed using Baron and Kenny's (1986) four step simple mediation process, which included three simple linear regression analysis and one multiple regression analysis to understand the beta change when the independent and dependent variable was controlled by the mediating variable.

In summary, the study found that all assumptions were met, all analysis showed significance, and all three alternate hypotheses were accepted, noting a partial mediation was discovered for RQ3. Employee innovation behavior significantly predicted transformational leadership style, $r(129) = .608$, $F(1, 129) = 75.76$, $p < .000$, with an $r^2 = .37$. Employee innovation behavior significantly predicted managerial support, $r(129) = .55$, $F(1, 129) = 57.25$, $p < .000$, with an $r^2 = .31$. Managerial support partially mediates transformational leadership and employee innovation behavior. A reduction in beta between step one, $B = .511$, and step four, $B = .369$ led to partial mediation.

Discussion of the Results

The purpose of research questions one and two was to validate existing research. To what extent does transformational leadership style relate to employee innovation behavior? To what extent does managerial support relate to employee innovation behavior? The research confirmed previous research, the transformational leadership style was an effective leadership style for driving innovation (Choi et al., 2016; Hammond et al., 2011; Pieterse et al., 2010; Shafie et al., 2014) and Lukes and Stephan's (2017) validated the relationship between managerial support and innovation behavior, however research question 3, working to identify the potential causal chain effect was the gap in research.

Research question 3 was the primary purpose of the study. To what extent does managerial support serve as a mediating variable between transformational leadership and employee innovation behavior? Identifying through the study that managerial support was a partial mediating influence will drive and increase employee innovation behavior will provide more clarity to leaders on how to best influence innovation behavior.

The study results mean that leaders have more knowledge of how to inspire employees who create product innovation, ultimately driving them to higher growth and competitive advantage. Previous research discovered transformational leadership style drives innovation but now leaders know that managerial support in addition, drives innovation. The discovery of managerial support positively influenced employee innovation behavior validated previous research already connecting the variables, but no research before the study showed the causal chain that drives the influence until the study. Although a full mediation effect versus a partial mediation effect would have been more desirable, a partial effect still provides more clarity to leaders on how to better influence employees who innovate products.

Conclusions Based on the Results

Comparison of the Findings with the Theoretical Framework and Previous Literature

The new research attempted to understand the extent to which transformational leadership style affects employee innovation behaviors mediated by managerial innovation support. The study adds to the existing theoretical framework of transformational leadership and builds upon Lukes and Stephan's (2017) theoretical model by validating the partial mediating relationship of managerial support between transformational leadership and innovation behavior.

The results of the study support previous research (Choi et al., 2016; Hammond et al., 2011; Lukes & Stephan, 2017; Pieterse et al., 2010; Shafie et al., 2014) and confirmed that there was a significant relationship between transformational leadership, managerial support, and employee innovation behavior in any combination of the three variables. The study validated that the transformational leadership style relates to employee innovation behaviors, managerial support does predict employee innovation behaviors, and managerial support does mediate, although only partially mediating the relationship between a leader's transformational leadership and employee innovation behaviors.

The study aids the discipline of Business Management, Leadership, and Innovation by providing more relevance and connection between existing research. The study helps leaders of employees who innovate understand how the transformational leadership style influences employee innovation behavior and the combination of transformational leadership and managerial support. The study's data collected was the employee's perceptions, how the employee perceives the managerial support, and the transformational leadership style was on the employee's innovation behavior, providing feedback directly from the source leaders want to influence.

Interpretation of the Findings

The results of the study yielded answers to three research questions. The first question was to understand to what extent does transformational leadership style relate to employee innovation behavior. Many researchers have connected the transformational leadership style to innovation (Choi et al., 2016; Hammond et al., 2011; Pieterse et al., 2010; Shafie et al., 2014); therefore, research question 1 was driven to validate previous findings. The alternate hypothesis was accepted; the transformational leadership style does relate to employee innovation behaviors.

The second question was to understand to what extent does managerial support relates to employee innovation behavior. Lukes and Stephan's (2017) also recently validated the strong relationship between managerial support and innovation behavior; therefore, the purpose of research question 2 was to validate the finding. The alternate hypothesis was accepted; managerial support does predict employee innovation behaviors.

The last question was to understand the extent to which managerial support serves as a mediating variable between transformational leadership and employee innovation behavior. Previous research influenced the study's outcome that managerial support was a partial mediation, part of the causal chain of influence between transformational leadership style and innovation behavior. The alternate hypothesis was accepted; Managerial support does mediate the relationship between a leader's level of transformational leadership and employee innovation behaviors.

Limitations

A design element that was a limitation to the study was the process of collecting the participants in the study. Although the research did not have narrow total population

characteristics, there was a threat to external validity in the research due to Qualtrics XM gathering the sample, narrowing the study's total participant pool (Qualtrics, 2019). Using a third party to collect participants does benefit a broader pool of participants. However, using a third party limits the analysis to validate the participants were genuinely product innovators as this was entrusted to Qualtrics versus using existing professional organizations that may have the characteristics vetted already. Another limiter was that the study was built for the employee to self-assess innovation behavior, and nothing was built into the study to validate if the employee was answered truthfully. Therefore, the study was trusting the participant was honestly self-assessing.

A delimiter to the study was the narrow scope of only analyzing the data at the total instrument levels and not at the subscale levels. All three instruments that were used have multiple questions that feed into a larger scale. Transformational leadership style and Innovation Behavior inventory also have several subscales. Only analyzing the total instrument level and not analyzing the subscales' specifics that clarify what was driving the data was a limitation.

Lastly, other delimiters in the study was the population. The study intentionally included various subgroups to the broader population, such as: U.S. born product innovators and product innovators only living in the United States. Exclusion criteria limited the breath of the population. However, on the alternate side, a limiter could be to include more exclusion criteria as the desired sample size was achieved in a few days. There were plenty of participants within the desired population to participate; therefore, there could have been room to exclude more participants, such as more tenure in the role or company size, that could have targeted a smaller population.

Implications for Practice

Transformational leadership style and the Multifactor Leadership Questionnaire (MLQ) instrument was well established theory and analysis in practice (Bass & Avolio, 1990, 1995, 1997, 2004). Many leaders in practice may already know and be aware what leadership style represents to the teams or the employee's perceptions of the leader's style. However, Lukes and Stephan's (2017) managerial support inventory was only a few years old, not readily integrated into practice, and currently has not been used in the United States. The findings of Lukes and Stephan's (2017) new instrument to the industry and the United States have significant gain for leaders in the United States, especially as the United States continues to stay ahead on innovation globally.

A result of the study was that managerial support had a mean score of 4.245, measured by a Likert scale of 1 to 5 (Lukes & Stephan, 2017). The score was relatively high, considering the scale was from 1 to 5. The instrument was the simplest of the three instruments, made up of only five questions (MLQ had 20 questions and IBI had 23 questions). The implication for practice was leaders who already have a transformational leadership style now know that if they also: (a) motivate the team to bring new ideas forward, (b) provide financial rewards for good ideas, (c) support idea implementations quickly, (d) is tolerant of mistakes, and (e) obtains supports for ideas outside the department (Lukes & Stephan, 2017), will drive higher employee innovation behavior.

Recommendations for Further Research

In all research, as data was reviewed, often more questions arise than answers. A review of four of the top recommendations for further research will be discussed in the following section. First, a recommendation developed directly from the data was to better understand how

the managerial support could go from a partial mediation variable to a full mediation variable. To better understand this potential opportunity, further research would need to be conducted to analyze if one or more questions that make up managerial support could potentially deliver a different mediation result through a multiple mediation analysis versus a simple mediation analysis.

The second recommendation pulled directly from the data was to provide more information on the employee self-assessed innovation behavior and the employee's perception of the leadership style and managerial support. A recommendation to counter this for future study was to have the employee's leader do a reverse study to validate both the perceptions and the self-assessment. Conducting a reverse perspective could provide a perspective that research has not seen yet.

The third recommendation pulled directly from the data was the lack of qualitative data to balance out the quantitative research, ultimately allowing for a mixed method approach. Qualitative data would provide more color to the reasons behind the answers, self-assessment, and quantified perceptions. Qualitative data could interview the participants directly impacted to balance out the research.

Lastly, the final recommendation, tied to a delimitation rather than data, was the participant selection. Using a third party such as Qualtrics provide many benefits; however, it also limits the study to only those participants that opt into the survey panels and were truthful in the replies. Future research could be to reissue the study directly to participants, using the same sample criteria, and not through a third party. Changing the way participants were reached would result in a reliable comparison and contrast the data and could further support the findings or reject them.

Conclusion

Businesses strive to differentiate themselves from the competition and remain relevant in the marketplace through innovation (Shafie et al., 2014). Businesses do not become innovative; instead, businesses require innovative people at all levels of the organization to succeed.

Leadership style was a critical driver in terms of how people perform at work. When business leaders use a transformational leadership style to drive innovation, providing a clear strategy and resource support, the result was more meaningful strategic choices for the organization and, more importantly, successful innovation increasing business (Jung et al., 2003).

The study answered the gap in existing research by helping leaders better understand the influence leaders have on employees who innovate and influence employees. The quantitative study surveyed 131 product innovators on the self-assessment of employee innovation behavior, the employee's perception of the direct manager's leadership style, and managerial support perceptions. The problem was that previous research connected transformational leadership to employee innovation and managerial support to employee innovation. However, no existing research worked to connect the two and understand the potential causal chain between the three variables until this study.

The data validated previous research and the various single linear regression connections between transformational leadership, managerial support, and employee innovation behavior. However, more importantly, the study unveiled the employee perception of managerial support was a partial mediation between the perception of transformational leadership style and self-assessed employee innovation behavior. More specifically, if a leader already has a transformational leadership style, and if the leader also applies managerial support to the team of employees who create product innovation, the leader will see an increase in innovation.

Increased innovation was what sets the company apart competitively as well as drive increased sales and job satisfaction. A win win for all parties involved!

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