RELATIONSHIP OF TRANSFORMATIONAL LEADERSHIP AND ORGANIZATIONAL

CHANGE DURING ENTERPRISE AGILE AND DEVOPS INITIATIVES

IN FINANCIAL SERVICE FIRMS

by

Christopher J. Kuiper

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Leadership

Liberty University, School of Business

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Abstract

The rate of organizations adopting Agile and DevOps methodologies has grown in recent years, with researchers observing the impact of leadership styles and methodology adoption, presenting challenges with sustaining and scaling change initiatives. Where organizations within the marketplace today reveal the significance of leadership in influencing change, while findings signal deficiencies with having leaders who are ready. The purpose of this quantitative correlational research examines the increased probability of failure organizations face when engaging in enterprise Agile and DevOps transformational change initiatives. Through investigating the relationship between transformational leadership behaviors, readiness for change, and organizational citizenship behavior exhibited by management and employees engaging in Agile and DevOps initiatives within regional financial services companies with a presence in the South Eastern United States. The resulting study surveyed 390 anonymous participants with varying backgrounds and organizational roles based upon predetermined quota constraints aligning with the Bureau of Labor Statistics, U.S. Census, and FDIC data. Utilizing three principal instruments to measure transformational leadership, change readiness, and organizational citizenship behavior; conducting statistical analysis for construct reliability, descriptive properties, and hypothesis testing, concluding the existence of influential correlation of change readiness and organizational citizenship behaviors having a relationship with transformational leadership. The research findings identify the association of organizational readiness and employee social citizenship responsibility with applicability to transformational leadership, bringing light to the significance of grooming and sustaining leaders at all levels of the organization.

Keywords: Transformational Leadership, Organizational Change, Agile, Enterprise Scaling

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Dedication

Through accomplishing a significant chapter in my life journey, may the admiration be found in our Savior Jesus Christ and my selfless soul mate, amazing wife, Keri. The journey is far from over, knowing that He continues to bless and guide us through the joy's as well as the challenges, humbly in reverence, knowing "He is before all things, and in Him, all things hold together" (Colossians 1:17, NIV). Keri, you unselfishly provide unwavering support, encouragement, and confidence to keep progressing even when the post-graduate educational journey of 15 years seemed physically impossible, living out our marriage covenant grounded on Faith, Patience, and Unconditional Love. To our wonderful children Alex and Kennedy you are the blessings that light up the day, you both enthusiastically aspire excellence while remaining generous in understanding patience when it was necessary – Thank you, I Love you both very much! Finally, it is with gratitude and appreciation to devote this dissertation to Pastor Gary Peterson, your servant leadership and heart for every soul as you are planting and cultivating the seed of obedience until sight, which have taken root – To God Be the Glory

Acknowledgements

Personally, I cherish the support of family and friends, genuinely valuing the encouraging conversations and messages throughout the entire doctoral process. Thank you to fellow classmates and cohort friends for prayer and scholarly support as we all communally forged ahead, enduring the DBA educational voyage. We all were exposed to the program rigor along with life demands, acknowledging that the encounters have grown us spiritually and cognitively to lead as champions for Christ.

Professionally, I would like to share my deepest gratitude and sincere appreciation to my chair Dr. Ellis, who early-on ensured that through focus and refinement, diligence would yield a fantastic outcome. Thank you, Dr. Erickson, as a member of the Dissertation Committee for your enthusiasm and backing. Dr. Moore, for your personal support and dedication to both myself as well as providing guiding assurance during the Doctoral process, reinforcing key elements to adhere to in order to remain on task. Additionally, I value the relentless support and ongoing guidance of the Liberty University Business School Faculty and staff throughout the DBA program. Finally, I would also like to recognize the Professional and Graduate Studies program at Cornerstone University for depositing the desire to learn and grow throughout my post-graduate trek as both a student and adjunct faculty member, it has been the blessing of students, faculty and staffs inspiring encouragement that has allowed for my educational drive to flourish.

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Section 1: Foundation of the Study

The following section provides a basis for the quantitative study seeking to characterize the relationship of transformational leadership and organizational change during enterprise Agile and DevOps initiatives. Through aligning the problem statement, nature of the study to focus on marketplace needs. The proposed research questions and hypotheses bring a clear focus on studies opportunity, with clarifying the focus around the theoretical framework and research scope with assumptions, limitations, and delimitations. With the overall fundamental research opportunity to broaden the body of knowledge.

Background of the Problem

Agile methodologies have an increasing presence on business today, both transforming organizational structures and requiring a mindset shift, in order for the Agile process to thrive. In 2001, with the introduction of the Agile Manifesto, came twelve principles providing a common ground approach and process for organizations to adopt (Alliance, 2001). With demanding marketplace responsiveness in combination with requiring leaders and employees alike to adopt Agile process changes. In today's efficiency conscientious atmosphere, Agile transformation involves many dynamic tactical, strategic, and operational outcomes to determine the most effective approach to scaling Agile transformation (Alqudah, & Razali, 2016; Tanner & Mackinnon, 2015). The operational complexity of Agile transformation and enterprise scaling within the marketplace mandates consistent leadership styles to succeed. Transformational leadership styles are rooted within every organization from strategy to personnel, feeding the organizational culture. Where the capacity for leaders to create and sustain culture change has significant value impacts and influences from employees, customers, as well as the broader marketplace (Jones & Recardo, 2013). Researchers have found significant leadership style

challenges in Agile teams' ability to associate expectations while adopting agile methodologies across the organization (Ferreira, de Lima, & da Costa, 2012; Parker, Holesgrove & Pathak 2015; Dikert et al., 2016). An area of focus is identifying the relationship transformational leadership styles provide with insight into Agile teams and the opportunity to scale agile methodology adoption within the enterprise. Overall several studies indicate uncertain leadership styles while adopting Agile methodologies where researchers have found unsustainable business impacts influencing Agile outcomes, due to the lack of establishing dynamic theories in connection with leadership styles (Nkukwana, & Terblanche, 2017; Kalenda, Hyna, & Rossi, 2018; Fatema & Sakib 2017). The impact of leadership styles and Agile methodology adoption focuses on short-term deliverables versus long-term Agile transformation, leading to challenges in leadership guidance and outcome achievement (Paasivaara, Behm, Lassenius & Hallikainen, 2018). Indicating a significant problem in understanding the relationship transformational leadership styles have as well as which best provide insight to Agile teams and DevOps the opportunity to scale, research arguments indicate a reduction in performance outcomes due to a lack of a clear leadership style and insight. While additional research by Walumbwa, Muchiri, Misati, Wu, and Meiliani (2018) associate a positive impact of leadership styles and sustainable performance outcomes, researchers acknowledge that there are a limited number of studies examining the impact of leadership styles and Agile particularly from a broader organizational level (Holtzhausen & de Klerk, 2018; Kozlowski & Klein, 2000). There are calls for future Agile research focusing on team effectiveness specifically to develop, rigorous studies, grounded theory models and other research inquiries in the context of the holistic organization (Kalenda, Hyna, & Rossi, 2018; Montgomery, 2018; Digsoyr & Dyba, 2012; Moe, Dingsoyr, & Dyba, 2010).

Problem Statement

The general problem to be addressed is the high probability of failure organizations face when engaging in enterprise Agile and DevOps transformational change initiatives. (Denning, 2018a, 2018b, 2018c, 2018d, 2017; Jorgensen, 2018; Mayner, 2017; Decker et al., 2012). Studies indicate significant leadership style challenges in Agile teams' ability to associate expectation while adopting agile methodologies across the organization (Denning, 2018b; Fatema & Sakib, 2017; Dikert et al., 2016; Parker, Holesgrove & Pathak 2015; Ferreira, de Lima, & da Costa, 2012). Indicating a significant problem in understanding the leadership styles that best provide insight to Agile and DevOps teams and the opportunity to scale agile methodology adoption, research arguments reveal a reduction in performance outcomes due to a lack of a clear leadership style and insight (Denning, 2018a, 2018b, 2018c, 2018d; Dönmez & Grote, 2018; Denning, 2017; Kakar, 2017; Nkukwana, & Terblanche, 2017; Parker et al., 2015; Ferreira et al., 2012; Moe et al., 2010). Overall leading to a significant problem of low success rates where one out of eight Agile programs fail and Unites States CIO's indicate significant bottom-line impacts reporting 21% of Agile projects fail (Jorgensen, 2018). The specific problem to be addressed is helping leaders understand the factors that can influence the success or failure of enterprise Agile and DevOps initiatives within regional financial services companies with a presence in the South Eastern United States (Karpik, 2018).

Purpose Statement

The purpose of this quantitative, correlational study is to investigate the relationship between transformational leadership behaviors, readiness for change, and organizational citizenship behavior exhibited by management and employees engaging in Agile and DevOps initiatives within regional financial services companies with a presence in the South Eastern

United States. The investigation provides scholarly insight, and quantitative research exploring further the foundational study, Mayner (2017) establishes, in the examination of employee behaviors associated with the implementation of Agile methodologies and DevOps transformation. With the adoption rate of Agile and DevOps increasing as well as the need to ensure successful outcomes (Paasivaara et al., 2018, Moravcová & Legény; 2016) The content and insight brought together within this study provides evidence for specialists looking for approaches to enrich Agile and DevOps programs with the opportunity to improve overall achievement rates as well as offer a foundation for scaling these initiatives.

The study will analyze correlations among transformational leadership, organizational citizenship behavior, and change readiness. Through investigating a random sample of business and technology professionals who have full-time roles engaging in Agile and DevOps initiatives within financial service organizations (comprising of financial institutions known as banks based upon the Federal Deposit Insurance Act (1950; 1970) and further defined as FDIC-supervised institution's meaning "any insured depository institution for which the FDIC is the appropriate Federal banking agency", with a baseline full-time equivalent (FTE) count greater than 500. Organizations with employee bases greater than 500 FTE fit the benchmark classification for being considered "large multi-establishment companies" outlined as a method within the report of organizations published by the United States Census Bureau (2019, para 6). Additionally, with ensuring the organizations meet the baseline FTE criteria, the study will represent the dynamic complexities of enterprise-scale involving Agile and DevOps initiatives (Alqudah & Razali, 2016; Leffingwell, 2018).

Nature of the Study

The method of research will be a quantitative correlational study. With the effort to evaluate the association of the relationship between transformational leadership behaviors exhibited by managers, and employee readiness for change and organizational citizenship behavior during enterprise Agile and DevOps initiatives, through utilizing correlational data, the variables will aid in illustrating the relationship (Creswell & Creswell, 2017). The correlational study method selection is due to calls from Agile researchers, indicating the need for more rigorous inquiries and research studies (Dikert et al., 2016). Research conducted by Mayner (2017) provides a framework and a call to broaden the body of knowledge through a correlational approach with participants in a single company in order to provide a foundation for further qualitative methods. In addition, Uhl-Bien and Arena (2018) emphasize the need for research to investigate the impact of differing leadership styles in "enabling or stifling" as well as the opportunity to take in account the "outcomes (e.g., dependent variables) associated with organizational adaptability, and not just productivity or performance" (p. 100). The broad business situation application of both qualitative and quantitative research provides general inquiry methods to address today's marketplace challenges.

Discussion of method. The fixed quantitative approach tends to primarily fit marketplace business situations where relatable variables in questions, and formulating hypotheses are prevalent (Creswell & Creswell, 2017). The fixed method has an important application, in five core business areas, the approach would tend to fit those business situations immediately stemming from a financial, operation, marketing, and experimental viewpoint to address strategic acquisition. Areas of human relations, operational procedures, and marketing are candidates for fixed research where the nature of predetermining an unbiased approach as well as utilizing

"standards of validity and reliability" (p. 18) tend to be flexible or mixed-method approaches over a fixed study. To appropriately conduct value-added applied business research, a researcher will leverage a primary means of inquiry. Depending on the research problem at hand, the strategy of inquiry provides the best research framework and process to approach the issue while providing factual evidence, in a suitable manner illustrating the working relationships of interest (Creswell, 2014) will be vital to meaningful research outcomes. Of the three strategies of inquiry: qualitative or flexible, quantitative or fixed, and mixed-method interconnect with research methods and design, along with philosophical worldviews to form the foundational framework for research (2014). In particular, the quantitative approach is the most suitable research method to understand the relationship transformational and DevOps change initiatives having an impact on effective outcomes while scaling Agile enterprise conversion. Agile researchers tend to leverage qualitative data elements to conduct specific quantitative research studies in order to examine cause and effect relationships impacting Agile adoption (Schuh et al., 2018; Gren, Torkar, & Feldt, 2017) furthermore Dikert, Paasivaara, and Lassenius, (2016) indicate the opportunity for quantitative research adoption where "specifically large-scale agile projects have not been scientifically studied" (p. 106).

Given the nature of the quantitative approach developing out of the pursuit and investigation for the "grand theories of science" quantitative research derives from mathematics to construct "generalizations that hold over diverse situations" (Stake, 2010, p. 182). The process of microanalysis and necessity to identify and comprehend how procedural methods work. The formal objective of quantitative research is a careful process where the intent of leveraging numerical data to acquire information about the world (Creswell, 2014). When conducting quantitative research, the specific methods that are beneficial to conduct value-accretive business

research are: descriptive analysis, incorporates depicting the outcomes, standard deviations, and a variety of scores (2014). Through a variety of methods, such as correlational studies or "straightforward comparison" (Stake, 2010, p. 23); causal-comparative or quasi-experimental, where the investigation by comparing groups of individuals not randomly assigned and the impact of a dependent variable on an independent variable (Brewer & Kuhn, 2010; Creswell, 2014). Due to the very nature of quantitative research replying upon close-ended instrumentation and structured inquiry, the variety of data elements from performance and observational channels will be statistically analyzed and interpreted to validate the proposed hypothesis.

Discussion of design. Given that the overall methods researchers elect to employ depending on specific business situations, where evidence is either fixed –quantitative, or flexible –qualitative, as well as a mixed-method approach become research methods and designs that a researcher might use to conduct value-added applied business research. The core goals of each of the research design, fixed, flexible, and mixed-method are dependent on overarching research problems as well as the causal effects of the inquiry to explain a research outcome (Creswell, 2014). The critical outcome of factual, evidence-based research is foundational to inform decision making (Stake, 2010) and is a critical component of value-added applied business inquiry. Leveraging objective factual information provides rationale support for determining the actions to take in the marketplace when addressing business problems. The core goal quantitative fixed research design is informing a hypothesis while conducting correlating research and analysis to formulate confidence by inferential statistics and qualified value-added outcomes. Through using a quantitative research approach, the broad questions of who, what, when, where address the fixed research method ordinarily provides contextual evidence to answer and support the underlying problems (Srivastava & Thomson, 2009). The underlying

focus of the quantitative correlation research establishes the study's purpose, where research investigation includes predictive based theories and anticipated associations among the outcome of variables (Creswell & Creswell, 2017). In order to examine the business problem through a quantitative research lens, the correlational method will examine the high probability of failure organizations face when engaging in enterprise Agile and DevOps transformational change initiatives. The key to addressing the business problem is asking between the two variables do they correlate; determining if the variables correlate positively or negatively and if the correlation is significant, with employing statistical regression methods such as t-test and ANOVA results to compare outcomes (2017, p. 159).

       Summary of the nature of the study. The examination of business issues, in a manner of "post-positivist knowledge claims" (2017, p. 17) and employing extensive experimentation, surveying, testing as well as verification; is one in which understanding the components that disclose or identify with result enables the examiner to best embrace a predetermined approach to clarify the business issue. Agile researcher Young (2013) indicates the opportunity for focusing on a narrow subset of leadership competencies in order to provide more accurate outcomes as well as the potential for "a correlational study – that could confirm, clarify, extend, or refute the present study's findings" (p.58). Due to the challenges of analyzing qualitative data and the flexible nature of the study where protocols and rigorous statistical techniques are leveraged to ensure reliability, generalizability, and overall validity (Kvale, 1996; Johnson, 1998). Through understanding the circumstances where various research designs are similar and also the conditions in which they differ, researchers are better able to align the appropriate research design while ensuring potential roadblocks and issues that may result from the research process are mitigated merely by a selection of a suitable research method. Stake (2010) defines

"the common concept of evidence is the determination of fact" (p. 120). However, caution is taken to avoid overreliance on evidence due to deficiencies the assumption may contain, given that research evidence is always fallible and imperfect (Phillips & Burbules, 2000; Creswell, 2014, p. 7). Understanding the benefits of qualitative research, analysts have great methods for expanding the level of assurance in their results; however, do not have a "numerical scale" for expressing that certainty (Stake, 2010, p. 126). Also, from a quantitative fixed research perspective, one of the challenges with methodology is the lack to "sufficiently address why or how a phenomenon occurs" (Srivastava & Thomson, 2009, p. 73). Regardless of the research approach, there are risks of generalization and potential research biases to appropriately address, as well as inherent research limitations, which may result in advisory against making firm assumptions only due to the nature of research restrictions. With an abundance of business situations and a variety of approaches to address each case in the marketplace today, the ability to leverage a particular dominate research design over another is a core necessity to appropriately address the business problem as well as ensure the future sustainability of business within the marketplace.

Research Questions

The opportunity to understand the relationship transformational leadership behaviors exhibited by managers and employee readiness for change and enterprise organizational citizenship behavior during Agile and DevOps initiatives, the specific correlational research will gather material evidence to substantiate the association of transformational leadership styles impacting the adoption of Agile methodologies across the enterprise. With the expanding significance of workgroups in organizations, Porter, Bigley, and Steers (2003) express the importance of leadership style consideration and research committing to determining useful

workgroup results and motivation. Resulting in a significant problem in understanding the

leadership style that best provides insight to Agile teams and the opportunity to scale

methodology adoption across the enterprise, research arguments indicate a reduction in

performance outcomes due to varying leadership styles and clear guidance (Kakar, 2017).

Leaving the opportunity for further research about the influence transformational leadership style

have on the dynamics of agile methodology adoption (Kalenda, Hyna, & Rossi, 2018;

Montgomery, 2018), to provide leaders with style approaches and methods to influence the

adoption of Agile methodologies. Overall, the research will identify specific obstacles and

opportunities that influence transformational and DevOps during scaling Agile.

> RQ1: To what extent does a relationship exist between transformational leadership
>
> behaviors of managers and employee readiness for change during enterprise Agile
>
> and DevOps initiatives?
>
> RQ2: To what extent does a relationship exist between transformational leadership
>
> behaviors of managers and employee organizational citizenship behavior during
>
> enterprise Agile and DevOps initiatives?

Hypotheses

The correlational, quantitative study examines the high probability of failure

organizations face when engaging in enterprise Agile and DevOps transformational change

initiatives. Where an examination of the general problem will occur through a correlational study

of transformational leadership styles and impacts in adopting agile methodologies across the

organization within regional financial services companies with a presence in the South Eastern

United States. Through survey methods that test the hypothesis and research questions by

appealing to organizational leaders and associates across various business units as well as cross-functional teams.

The following is the primary research question guiding the research:

RQ1: To what extent does a relationship exist between transformational leadership behaviors of managers and employee readiness for change during enterprise Agile and DevOps initiatives?

The hypotheses to address the primary research question:

Ho1: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee readiness for change during Agile and DevOps initiatives.

Ha1: Higher levels of transformational leadership behaviors exhibited by managers are related to higher levels of employee readiness for change during Agile and DevOps initiatives.

The second research question informing the research:

RQ2: To what extent does a relationship exist between transformational leadership behaviors of managers and employee organizational citizenship behavior during enterprise Agile and DevOps initiatives?

The hypotheses to address the second research question:

Ho2: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee organizational citizenship behavior during Agile and DevOps initiatives.

Ha2: Higher levels of transformational leadership behaviors exhibited by managers are related to higher levels of employee organizational citizenship behavior during Agile and DevOps initiatives.

Theoretical Framework

The theoretical framework is informing the examination of the relationship between transformational leadership behaviors exhibited by managers and employee readiness for change and organizational citizenship behavior during enterprise Agile and DevOps initiatives. With the primary focus of the study assessing change disposition and organizational citizenship behavior.

Discussion of Transformation leadership theory. Placing attention on management, transformational leadership behavior influencers, and core dependent variables aiding success in organizational change easing difficulties (Armenakis, Harris & Mossholder, 1993) and explicitly evaluating change readiness. Where the capacity for leader's inspirational actions and ability to create guiding vision teams regardless of the environment changes (Coleman, 2018). According to Burns (2004), some dynamics empower leaders and followers, where mutually "wants and needs, motivation and creativity, conflict and power" (p .211) all interlink to the theory however at the core are the values.

Discussion of change theory. Through aligning change theory (Lewin, 1947), along with DeFluer and Ball-Rokeach (1989) exhibition of "individual differences theory, social differentiation theory, and social relationship theory" (Mayner, 2017, p. 8) and focusing on transformational leadership behaviors of manager's. Where the critical focus of the theory of change aligns the core desired objectives and what preconditions are necessary to attain the desired change. According to Lewin, the capacity to change is behavior with the equation of function, person, and the environment.

Discussion of organizational citizenship behaviors theory. The relational aspects to both organizational citizenship behaviors during an organizational change event where business processes shift from traditional waterfall methods to Agile across the enterprise. While the

outcomes of team members fit the necessary tasks in order to achieve outcomes. Katz (1964)

considers the motivation association to organizations and citizenship behaviors, where there is a

call for various behavior types as well as the association of motivational factors. The theory

grounds on the notion of an individual's commitment to outcomes that are indirectly linked to the

normal obligations in an effort to achieve a higher purpose (Somech, & Drach-Zahavy, 2004).
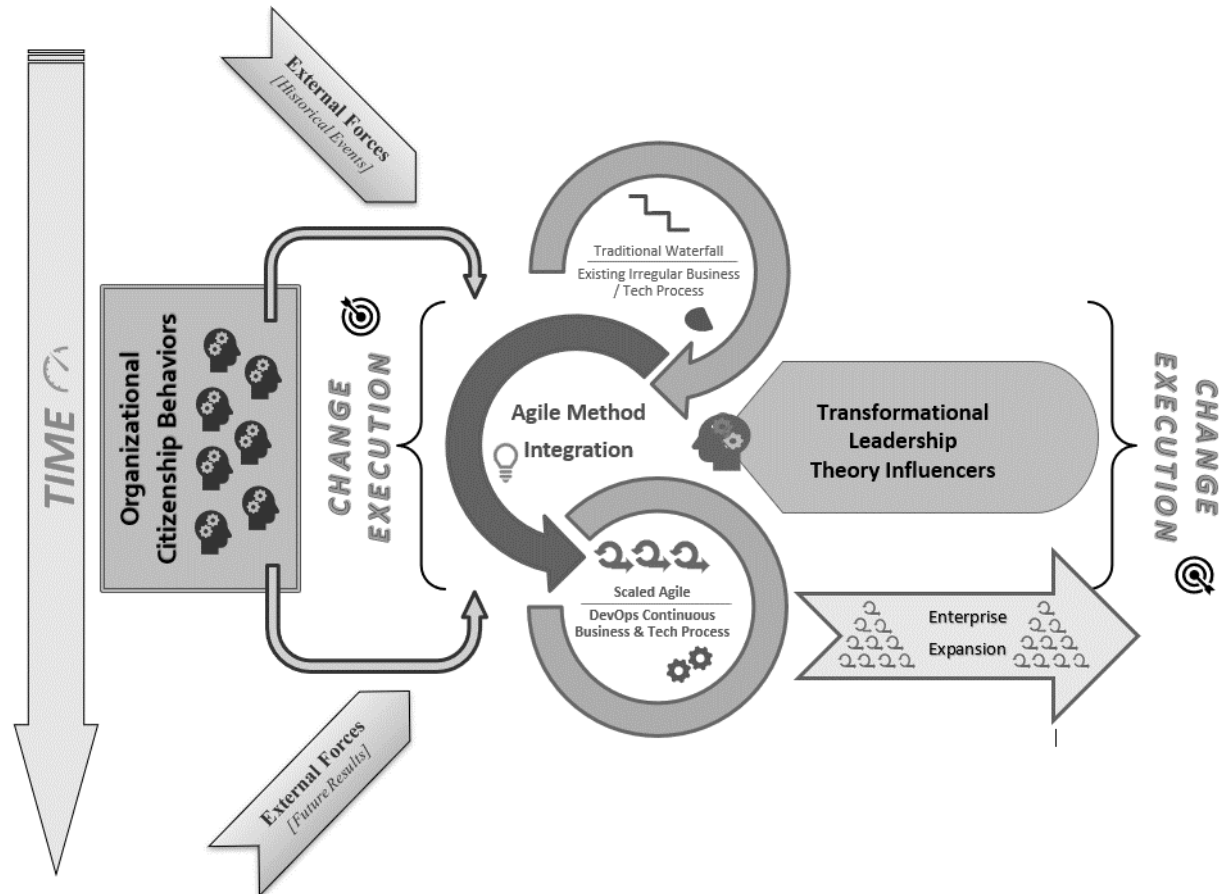
Figure 1. The conceptual model is indicating the correlation of transformational leadership, organizational citizenship behaviors, and aspects of change execution.

Discussion of relationships between theories and variables. Through the quantitative

correlational method, Burns (1978) transformational leadership theory in association with

organizational citizenship behavior aligning with Homans (1958) Social-exchange theory as well

as change execution supported by Lewin (1947) Change theory. Figure 1 visually reflects the

theoretical framework of the study in a manner that vertically indicates the time interval and horizontally depicting the various theories and influencers, where the dual influences of readiness for change and organizational citizenship behavior contribute to successful change (Mayner, 2017).

   Summary of the conceptual framework. Through the association of the theoretical framework which informs the study the overall relationship between transformational leadership behaviors exhibited by managers, and employee readiness for change and organizational citizenship behavior during enterprise Agile and DevOps initiatives, drawing influence from the three fundamental theories. Leveraging a primary focus on assessing change disposition and organizational citizenship behavior in the effort to scale Agile methodology adoption through the influence of the core theories.

Definition of Terms

   Agile Development. The operational approach of iterative and evolutionary methods embracing change and goal-driven outcomes are a focus of cross-functional teams aligning on tasks, resources, and quality within a predetermined timebox (Santos, Pereira, Ferreira, & Machado, 2018.; Larman, 2004).

   Change Execution. The capacity and inclination for working groups within organizations to aid in the planning and implementation of change. Through the willingness to embrace the change influences personal philosophies and mindsets as well as team member conformity to the change (Burke, 2017).

   DevOps. The focus on improving collaboration among teams with an emphasis on culture and people in order to enhance the partnership of development and operation groups (Rosenstein, 2014). Further defined by Gartner (n.d.), DevOps is **"**a change in IT culture, focusing on rapid IT

service delivery through the adoption of agile, lean practices in the context of a system-oriented approach" (para 1).

Organizational citizenship behavior.: The association of discretionary behavior types as well as contributions "that are not explicitly in association with specific job requirements" (Newton & LePine, 2018, p. 7).

Scaling Agile. The approach to adopting Agile methodologies across the enterprise, through leveraging tailored frameworks where "current approaches for scaling Agile blend Agile and lean practices to address real industry needs" (Ebert & Paasivaara, 2017, p 99.).

Transformational change. Competences that are essential to implement effective change processes. Where change theory within the organization and management, through the model of "'transformational managerial competence' is singled out and affirmed in practice as a reliable instrument in the process of transformation of the organization" (Radivojevic, Curcic & Devic, 2016, p. 24).

Transformational leadership. The leadership theory of why and how leaders motivate individuals to achieve beneficial outcomes beyond expectations transcending self-interest in order to realize a vision and higher purpose (Burns, 1978; Bass, 1985). Transformational leadership theory "requires that leaders develop and articulate a shared vision and set high expectations that motivate, inspire, and challenge followers (inspirational motivation)" (Matzler, Bauer & Mooradian, 2015, p. 818).

Assumptions, Limitations, Delimitations

The following assumptions, limitations and delimitations, are the study bounds and opportunity to address the core business problem as well as providing opening to add to the body

of knowledge and where "future research may address these issues by integrating appropriate items into the scale and adding relevant subscales" (Creswell & Clark, 2017, p. 366).

Assumptions

The primary assumption is the ability to obtain an adequate selection of study participants in order to meet the study sample amount required for the study. Also, the full participation of survey recipients and their capacity to complete the questioning in entirety. Where the survey outcomes are complete and accurate, complete surveys are those where participants have fully completed the set of questions, also survey results that do not align to common defects such as improper trap question responses, straight-lining where the results indicate answering with the same response or pattern identification. Overall, survey participants are assumed to comprehend questions where the study assumes participants are as practical as possible, providing accurate and reasonable responses.

Limitations

The study focuses on three key factors, transformational leadership, change readiness, and organizational citizenship behavior. A significant limitation is the ancillary components and variables which influence organizational change and contribute to failure or success. Those ancillary influencing components impacting the "change process and context factors pertaining to the social support and perceived control recipients experience are likely to increase recipients' perceived coping potential" (Oreg, Bartunek, Lee, & Do, 2018, p. 78). Also, the mechanism for determining organizational citizenship behavior align with "the perspective of a peer or manager evaluating the employee" (Mayner, 2017, p.12). Where the goal of the study bases a comprehensive perspective of self-evaluations seeking individually focused responses from

participants, in order to objectively identify various emotional and cognitive aspects contributing

to participant attitudes towards change and the explanation (Raineri, 2018).

Also, from a quantitative research perspective, one of the challenges with methodology is

the lack to "sufficiently address why or how a phenomenon occurs" (Srivastava & Thomson,

2009, p. 73). Regardless of the research approach, there are risks of generalization and potential

research biases to appropriately address, as well as inherent research limitations, which may

result in advisory against making firm assumptions only due to the nature of research

restrictions. The core bias to mitigate within this study is confirmation bias and the efforts the

researcher employs in order to ensure observations and analysis of the research data are not

misleading. Through the effort of aligning to the reasonable expectations Conway, and Lance

(2010) outline as in their argument against the misconceptions and recommendations of what

"gatekeepers should reasonably expect regarding common method bias" (p. 332).In order to

reduce several other types of bias through the fixed study utilizing current scales available

through publications. Also making use of an anonymous survey, mitigating the following

potential biases the halo effect, wording bias, and leading questioning. The question order bias

mitigation is through the predetermined order of questions published by the scales author.

Finally, to avert response bias, the process of employing Creswell and Creswell's (2017)

recommendation for approaching nonrespondents will provide a "respondent-nonrespondent

check for response bias" (p. 157).

Delimitations

The study will be bound by focusing on the three core outcomes transformational

leadership, change readiness, and organizational citizenship behavior. Also, the overall objective

of the participant population in relation to the Financial Institution and those areas within the

organization involved in Agile DevOps transformation. Through ensuring not to limit the study

population only to groups directly involved with Agile development, however broadening the

study bounds to impact areas due to the focus on DevOps indirectly. Mayner (2017) indicates,

"The shift to DevOps expands the scope of Organizational Change from the software

development department in the IT organization to the rest of IT and the company as a whole" (p.

25). In addition the focus of the study will align outcomes specific to the influence of

transformational leadership behaviors in alignment to DevOps scaling agile outcomes, due to the

extensive nature and popularity of prior studies associated to the transformational leadership

style the study will not attempt to expand upon the leadership theory (Judge & Piccolo, 2004).

Significance of the Study

With a move from conventional methodology to an iterative attitude, forcing new

conditions and initiative commitments as far as receiving an Agile and DevOps outlook, adapting

new aptitudes, commitments for resources, and overall hierarchical structures. Pazderski (2018)

defines agile as the apparent significance of reasoning and being agile, not merely doing agile.

The significance of this study aligns the compelling aspects of organizational change specific to

Agile and DevOps conversion and transformational leadership impact on the realization of the

Agile changes. Where an arrangement of rules – define the opportunity to expand Agile

methodologies with the enterprise where leadership shares practices and populate them at the

proper level. There are current literature gaps and limitations, indicating the need for

organization-centric qualitative studies to confirm previously structured inquiries (Jorgensen,

2018; Mayner, 2017).

Reduction of Gaps. The focal opportunity for assessing transformational leadership

impacts and the opportunity to quantify a correlation between organizational citizenship

behaviors in order to understand how transformational leadership aids in accomplishing Agile and DevOps goals (Turetken, Stojanov & Trienekens, 2017). The core focus becomes the intentionality of proper leadership approach and mindset where "agility is the paradigm shift everyone must attain" (Pazderski, 2018, p. 49).

The shift in many instances is due to organizational complexity and size of fortune 500 firms focusing on diversifying as well as aspects from both centralized and decentralized functions, to operations extending to global facilities, the opportunity to scale operational outcomes to satisfy harmony between dependability, proficiency and change limits. To scale iterative, Agile and DevOps outcomes researchers Paasivaara et al. (2018) and Vinodh et al. (2009) contend that technological advances and digital interruption are currently driving business to become Agile. With the focal opportunity of organizational citizenship behavior to cultivate lean Agile and DevOps and build upon a common Agile framework that can scale the span of an enterprise, where leadership adjusts rapidly to changing innovation and conditions regardless of size. The impact of scaling Agile on Fortune 500 firms is evident in not only product innovation, but in several aspects of the firm due to the flexible framework and underlying approach to business problems (Paasivaara et al.).

Implications for Biblical Integration. Realization and acceptance that God who supplies business resources, aids business to participate in work with a "relentless spirit of creativity" (Keller & Alsdorf, 2016, p. 49). Perception is the key where business effort is an assignment serving God and others (Van Duzer, 2010; Keller & Alsdorf, 2016). Throughout the Bible, the phrase "one another" brings alignment to God and relationship with others in manners of love, encouragement, and service. The "symbiotic" relationship between executives and employees is where each serves in unity to perform tasks and advance business outcomes

(Hardy, 1990, p. 166). Business from God's perspective has the same purpose to serve as an act of worship (Van Duzer, 2010; Keller & Alsdorf, 2016). With the significant difference being tactical, it is variety and competition drive business to serve a blend of constituencies in diverse ways to carry forward God's kingdom in business.

From the Biblical worldview, the concept of abstract ideas is not theoretical to God. The Bible provides a perspective where Paul shares how the law held guardianship until Christ, and confinement under the law before believers coming to faith. To the point in time when the revelation of what faith "was to come" that we might find justification by faith and no longer held under the law but belonging to Christ as heirs according to Abraham's promise (Galatians 3:23-28). Knowing who we are and the basis for our being, we can both respect other's developed assumptions; however, the lens of truth in the triune; God, Jesus, and Holy Spirit, that all of the mysteries and wisdom of this world align to the work of God. The Bible provides a sound understanding of the centrality of creation in Christ (Colossians 1:16), providing the case and supremacy of Christ and the very foundation of creation itself. The key around an individual's perspective or worldview can align with personal beliefs and the truth of God's word versus the worldly view. (2 Timothy 3:16-17) Creswell and Poth (2018) provide a view, regardless of whether we know about it or not, we continually convey certain convictions and philosophical presumptions to our exploration, which impart in us amid our instructive research. The key is also recognizing that the adaptation and shift of assumptions will occur over time (Creswell & Poth, 2018). However, for those born again and living within God's perspective, understand Paul's compelling instruction which allows for the testing of God's "perfect will" by not emulating "the pattern of this world" however changing through "renewing" of our thoughts and approaches (Romans 12:2). The Christian worldview of action and faith interacts with a

secular worldview having the opportunity to provide God's truth using those who are Christ-followers.

      Relationship to Field of Study. The integration of research, concepts, theories, and Biblical worldview application are significant to the relationship of business leadership within the marketplace. Hughes, Rigtering, Covin, Bouncken, and Kraus (2018) comprehensively address current business issues and advances in optimal capital distribution and performance guidance impacting the allocation of resources and supply chain management, within Fortune 500 firms from e-retailer to manufacturing in areas of activity costing, digital transformation, and agile methodologies. The evident leadership focus within business practices and theories reflect the interdependencies of the value chain and overall relationships to the broader marketplace. They are specifically focusing on the significance of transformational leadership, where the methodology provides both a foundation as well as a beneficial outcome for business application. Appreciating the variety of research paradigms and utilizing the appropriate method that will address business problems, while from a Biblical worldview rooting in the truth of Christ and His testimony (John 18:37) — conveying the importance of developing sound business strategy and effective execution from both corporate and business-unit levels. Where the capacity to fulfill strategy collaboratively aligns with culture as well as adjusting to individual and group needs to successfully leverage current strategic models and frameworks that fulfill business objectives and validate purpose. The overarching value relationship of business leadership is the sustainable model Fjeldstad and Snow (2018), consider the mutual process of value creation between partners, suppliers, customers and the ever importance evidence of value delivery to end-users over time, providing the opportunity for a Christian worldview impact in the manner Van Duzer (2010) identifies. To advance business through the power of the Holy Spirit, enabling

the call to bring Christ evidence and the triumph of God to the world as the actual redemptive value with which business can flourish in the marketplace.

Summary of the significance of the study. While significant research attempts provide some connection among transformational leadership and organizational citizenship behaviors, there is a current literature gap allowing quantitative proof assessing the relationship in association with preparation for enterprise Agile change, with regards to Agile and DevOps reception (Hughes et al., 2018). To execute the study with existing research instruments in order to identify the factors outlined within the hypothesis and research questions and focusing on the examination of individuals working for a regional financial services company with a presence in the South Eastern United States. Where the execution of Agile and DevOps across the enterprise, allowing the integration of the research with a purpose to address literature inequalities (Dumas, Beinecke, 2018). With the intended outcomes of the exploration study, to discover that the proposed correlation of transformational leadership and Organizational Citizenship behaviors have associations with each other at the time of Agile and DevOps change. Where the beneficial context of the study will aid in the function of significant change with the enterprise as the change relates to Agile and DevOps activities and the desire to accomplish value-added outcomes.

A Review of the Professional and Academic Literature

The body of knowledge and literary works within this study shape alignment of central themes from transformational leadership, organizational culture, change behaviors, Agile methodologies, and DevOps. With the overall literature reviews focal purpose to substantiate the association of the scholarly works and the study's principal research questions.

The capacity for organizations and leaders to successfully execute change initiatives across the enterprise efficiently and sustainably is significant given the challenges as well as failure rates of change initiatives (Domez & Grote, 2018; Vrhovec, Hovelja, Vavpotic, & Krisper, 2015; Mackey, 2010). Given the importance for current leaders to guide ideation for future challenges, Mackey shares a perspective that due to inconsistency between the 'aspirational' values (p.134) supporting the new vision and leadership are a fundamental reason for change failure. The following literature comprehensive review of current scholarly work indicates how this study relates to the existing body of knowledge — aligning the contextual review from the perspective of leaders, employees,-and stakeholders (Jones & Recardo, 2013). The literature review investigates the relationship of transformational leadership and organizational change during enterprise Agile DevOps initiatives, with the initial focus on elements of transformational leadership theory and principle behaviors influencing change. Where the additional insight into the body of knowledge associating elements of organizational change, mainly focusing on execution and readiness. With the final elements of comprehensive review primarily concentrating on Agile and DevOps aligning to both impacts influencing outcomes as well as associating enterprise capacity to scale. The literature review comprises focus on the association of the body of knowledge and overall relationship to the primary concentration of the study and correlating research questions.

Transformational Leadership

The theory of transformational leadership (Burns, 1978) has evolved from political associations to much broader research context of organizations, where the concept grounds upon the collective nature of both leaders and followers aiding in the advancement of higher levels of motivation and morale. Further transformational leadership research by Podsakoff, MacKenzie,

and Bommer, (1996) provide several dimensions to the style where they associate vision casting, outcome expectations, logical stimulus, endorsing common objectives, one-on-one sponsorship, and role modeling. Bass and Avolio (1994) found, given the focus of the leadership approach on the cause of change, individually and collectively, the natural state of transformational leadership becomes the evolution of followers to leaders themselves. Also, in consideration of other leadership styles such as absent laissez-faire where outcomes in effect are the opinions of the leader to transactional focus on the deficiencies of followers with attention on value exchange of performance and consequences are vital behaviors drivers. However, Antonakis and House (2013) call for studies finding connections where transformational leadership has "the ability to actually transform individuals and organizations" (p 27). Finding that significant research on transformational leadership exists across a multitude of disciplines as well as associating charismatic leadership traits (Antonakis, 2012).

Further research connecting charisma and transformational leadership as an evolving new paradigm of leadership (Bryman, 1992), where charismatic appeal becomes "necessary but not sufficient condition for transformational leadership" (Fry, 2003, p. 702; Yammarino, 1993). However overall the core objective that transformational leadership can characterize with is the capacity for leaders to cast a future state vision and "communicate it in a way that causes followers to believe and have faith in the vision of organizational transformation to make the pain of change worth the effort" (Fry, 2003, p. 702; Tichy & Devanna, 1986; Burns 1978). In contrast, Anderson, Baur, Griffith, and Buckley (2017) suggest the over-exaggeration of transformational leadership and the overall significance of the theory's impact on future generations.

Behaviors influencing change. Fundamentally leadership engagement in change

involves the core capacity to harness the true capabilities of others in order to execute change

successfully (Spagnoletti, 2013). Northouse (2018) seeks to associate transformational leadership

to a broad range of applications from individual, organizational, and cultural perspectives where

effective relationships form and "leaders are inextricably bound together in the transformation

process" (p.164). The perspective of transformational leadership in association with change

management is the engagement of "both hearts and minds" in order to not merely conform but

adopt innovative ways to act and think. (Jones & Recardo, 2013, p. xvi). The focal opportunity

for leaders to effect change, Higgs and Rowland (2011) endorse five key areas where

transformational leadership competencies affect change leaders: make the requirement for

change, draw in others to perceive the need; make the organized change; connect with others in

the entire change procedure and manufacture responsibility; execute and continue change with

strategic plans; examining, and testing; along with encourage and creating capacity. So that

individuals are urged to locate their solutions for issues and challenges. A distinct motivation

behind transformational leadership is the thought of centering upon necessary change and

tending to difficulties inside the association, allowing a leader the point of view and necessary

tools that allow for adaptability and commitment value. (Underhill, McAnally, & Koriath, 2007).

The opportunity for leaders to engage employees and stakeholders is crucial to transforming

change, where the phenomenon of organizational citizenship behavior (Organ, 1988), the

voluntary engagement and aid of employees within the workplace to promote excellence, a

significant behavior lever a leader can recognize and use to promote positive change among

workgroups. Transformational leader behaviors promoting organizational citizenship behaviors

foster cultures of fairness (Caldwell, 2011, p. 348). Nelson and Cooper (2007), along with Avey,

Wernsing, and Luthans (2008), revealed engagement and positive attitudes of employees in the manner of organizational citizenship behavior improve organizational change success rates in addition to decreasing employee resistance. Irshad and Hashmi (2014) support transformational leaders having an understanding and perspective of organizational citizenship behaviors, recognize employee's abilities to provide value within the organization in performing within the mindset of going the extra mile in order to attain organizational change objectives. Also, Caldwell (2011) considers the relationships of transformational leaders between employees and stakeholders, where the behavior of transformational leaders encouraging organizational citizenship behaviors as well as "understanding how to manage highly motivated employees who may inadvertently create organizational problems" (p. 348).

Peter Drucker, a prominent influencer of management and leadership, considers the importance of relationships and the need for managers to understand the importance of sideways relationships as well as those that are 'hierarchical in nature.' From an interfacing point to transformational leadership and the philosophical learning procedure of "how to deal with connections where there is no specialist and no requests" where the key for transformational leaders turns out to be better comprehend our encounters and help us better utilize the information we capture and learn (Mackay, 2010). In considering the historical foundation and intensification of transformational leadership, the domain of engagement and motivation aligns with Maslow's (1943) hierarchy of needs; along with the critical crossroad of transformational leadership approach, trusting on vision as opposed to management by objective and "focusing on higher aspirations" (Mackay, 2010, p.224). Principally, Maslow's hierarchy aligns in transactional leadership, although levels of self-respect, wisdom learning, empathy, and lastly self-actualization align with transformational leadership. Bergquist and Mura (2011), along with

Aydin (2018), associate results and performance outcomes aligning aspects of transformational leadership, aiding leaders overarching 'humanity beliefs' drivers of motivation and the underlying makeup 'human aspiration' (p.162). The discipline of transformational leadership embraces the formation of high ideals and mindsets carrying them forward for daily relevance through purpose, transformational skillsets, and opportunities for change.

Conversely, within the spectrum of change, there are those leaders seeking transformation in a manner of moral discord; known as "pseudotransformational leadership" (Bass, 1998; Bass & Riggio, 2006) where the morality of transformational leadership warps through the lens of the leader's self-interest versus the collective. In essence, the authenticity of real transformational leadership character is the capacity for leaders to operate in a transcendent mindset for the engaging benefit of others and rise above their self-interests (Howell & Avolio, 1993; Caniëls, Semeijn, & Renders, 2018). The selfish regard that pseudotransformational leadership exudes may provide as Northouse (2018) indicates "strong inspirational talent and appeal" (p. 165); however, through domination manipulates— followers toward personal values and is an aggressive leadership style due to the ignorance of the common good and welfare of others. Handscomb, Jaenicke, Kaur, Vasquez-McCall, and Zaidi (2018) provide an example of where leadership in a particular organization kept on working inside the standards of their old culture. Reluctant to engage individuals and groups; requiring micro-managed plans and specific timelines for the final result; and requesting task details in status reports on a regular week by week basis, where leader's behaviors were choking productivity bringing overall objective interest to the personal benefit versus the collective desire of the new culture. Also, where the opportunity for leaders to transform and remain adaptable to both the future cultural state. As well as enabling the processes necessary to achieve is foundational to the role of transformational

leadership and what Uhl-Bien and Arena (2018), "consider the capacity of enabling (or stifling) the adaptive process" as well as considering outcomes (e.g., dependent variables) associating with "organizational adaptability, and not just productivity or performance" (p 100). Avolio and Bass (1988) support transformational leadership primarily due to the aspiration leading to achieving performance objectives and higher degrees of motivation. Yet there are researchers calling for the connection of leader's capacity and natural draw to achieve higher levels of motivation and performance (Mosson, Hasson, von Thiele Schwarz, & Richter, 2018; Yammarino, Spangler, & Dubinsky,1998) given that researchers often leave critical gaps and questions to be answered in associating leaders transformational in linking individual followers desire to achieve. One theory that has relevance due to the necessary processes to have a balance of change, along with control to achieve effective outcomes and organizational success. The traits in which leaders can achieve motivating others along with casting an empowering vision; the capacity and dynamic skillset finds balance in both transformational and transactional theories where Yammarino, (1993) considers a continuum is present providing leaders with the appropriate behaviors to achieve effective outcomes.

Bass (1985) provides a foundational basis for transformational leadership where followers are driven to exceed interests and motives beyond themselves, lead to support of the organizational change. Higgs and Rowland (2011) propose that transformational leadership does not directly associate with organizational change and a follower's capacity to accept or support the change. The challenge they propose and provide evidence brings the leader front and center within the change management process and argues the lack of transformational leadership having the "prescriptive models" that change leadership theorists provide, such as the structured models Kotter (1996), Frenandez and Rainey (2006) contribute.

Overall since the role of leadership has such a prominent responsibility as the focal point for organizational change (Kuipers et al., 2014). At points where significant change is at hand Kouzes, and Posner (2012) provide guidance indicating leadership being an "art" where there is contentious desire to share aspirations and mobilize followers (p. 30). There is a need for the leader to not only have a vision for change; they must reflect a change management skillset where the successful process of becoming change agents compels and motivates others (Van Knippenberg & Hogg, 2003). From the perspective of a leaders behaviors, Gupta and Sharma (2016) indicate that "both engagement and self-efficacy have a positive effect on one another which leads to good organizational performance" (p. 58) — given the focus on performance outcomes and the association with motivation, driving both leaders and how they instill motivating vision within followers. Draw's relevance with Bandura's (1998) concept of collective efficacy. Where the fundamental importance is the shared beliefs of a collective group to "organize and execute the courses of action required to produce given levels of attainment" (Salanova, Llorens, Cifre, Martinez, & Schaufeli, 2003, p. 45). It becomes the affiliation of the leader and transformational style which Jones and Recardo (2013) calls a vision for change where "change team members and employees of the organization must be able to imagine this new, transformed state for the organization and believe in it" (p. 31). Kavanagh and Ashkanasy (2006) support the opportunity for transformational leaders to accomplish organizational change through the support and implementation of a "unique vision of the organization through powerful, persuasive personal characteristics and actions designed to change internal organizational cultural forms and substance" (p. 81). There are significant studies surrounding employee engagement and the overall impact on organizational change (Cascio, 2011; Herold, Fedor, Caldwell, & Liu, 2008; Pillai & Williams, 2004). Core research findings by Graen (2008)

indicate the degree of participant engagement suggests the correlation to capacity for change and the overall citizenship behaviors, causing adaptation to the changing conditions. They are providing a perspective that has significant relevance to how employees embrace transformational leadership and change overall.

Employees perspective. Considering a leader's noticeable impact on follower behavior and change outcomes, there is evidence of an intricate link between transformational leadership and employee impact (Sun, Zhang, Qi, & Chen, 2012; Wang, Oh, Courtright, & Colbert, 201; Chen & Tang, 2009). Research by Tepper et al. (2018) provides a perspective of follower relationships to transformational leadership behaviors where the dynamics of change on a daily basis are points that "employees must navigate through varied experiences of need activation and satiation" (p. 1344) — leading to what Tepper et al. consider as an interdependency on the level of transformational leadership a follower requires. The extent of transformational leadership followers also requires what researchers consider "need fulfillment" (Bono & Judge, 2003; Avolio, 2010; Bass, 1990; Burns, 1978). Conducting broader research Bono and Judge (2003) correlate transformational leadership and why followers' behaviors reflect increases in employee performance, satisfaction, motivation, and overall organizational commitment.

Conversely, Lambert, Tepper, Carr, Holt, and Barelka (2012) debate needs fulfillment from a follower's perspective and argue the "need for leadership is a situation-specific assessment that may vary across leaders, tasks, time, and forms of leader behavior" (p. 915). Steyn and Cilliers (2016), provide transformational research substantiating outcomes where reduction of optimism and lack of transformational leadership was evident. Their research found leaders who were not demonstrating transformational leadership characteristics of 'individualization, inspirational motivation, idealized influence, or intellectual stimulation' (p.8),

which overall hinders the mindset of team members and migration from changing integration as well as respect and empathy. Where David (2016) supports a perspective of aiding followers through effective and rational transformational leaders; who engage in decisions of fact as opposed to bias; goal alignment to long-term outcomes versus short-term profitability; aligning organizational decisions before benefiting themselves; and reinforcing humility to ensure employee support nurtures subordinates to excel, not taking credit. The understanding of core transformational leadership traits foundationally driving employee actions is critical to sustaining change within an organization. In consideration of transformational leadership skills and beliefs revealed by David and Matu (2013), they indicate that transformational leaders appreciate teamwork, accept ambiguity, and value people over the organization. Farahnak, Ehrhart, Torres, and Aarons (2019) share a perspective where employees have tendencies to reflect "positive attitudes toward the change being implemented if they feel as though organizational leaders understand the potential challenges but have confidence that employees can overcome them and successfully implement the practice" (p.11). A critical element where relationships between leaders and employees thrive is communication. The emphasis of clear communication is a significant factor providing a compelling purpose for change as well as a primary channel leader's leverage to convince the importance and need for change, foster buy-in, establish model behaviors, and objectively gauge change progress (Licorish & MacDonell, 2015).

Above all, researchers align on the significance of communication, and the critical channels, specifically within an organization "upward communication," allows for transparency and functional focus to meet cultural openness as well as overall organizational success. Janet Clancy-Feliciano (2016), indicates the importance of encouraging upward communication due ultimately to the association of failure or success and how organizations promote beneficial

working environments. Employing 'upward communication' appropriately and engaged in addition to other communication channels upward communication solves the problem with care, provides a level of confidence on subordinates, brings a truly participative approach with management, and can change autocratic attitudes (Bourne 2016).

Within the organization, the ability to consistently communicate and provide clear as well as appropriate direction; the process requires both downward and upward communication where a dynamic bidirectional communication process that is consistent is both healthy for organizational culture in addition to shortening the communication channel. The powerful dynamics of resilient organizational communication bring a cultural impact of openness along with a strategic focus that, in many instances, cannot be validated without vital organizational information that employees across and the organization have essential knowledge that can be leveraged by leadership. Spector (2013), indicates that "employees possess 'local knowledge' about customers, competitors, and how the products and services of the organization meet the shifting needs of the marketplace that need to be communicated upward in an organization" (p. 156). While organizations must align with "cultural differences in communication requirements may be caused by cultural norms influencing the preferred style of the presentation, content, or delivery of information. These differences may be national, generational, professional, and organizational" (Bourne, 2016, p. 44). Research indicates that upward communication has a significant impact on organizational culture and has become also known as "employee voice" (Kumar, and Mishra, 2017). "Employee voice has been conceptualized as a behavioral construct that focuses on subordinate superior upward communication" (Kumar & Mishra, 2017, p. 1016). Given the impact on culture and influence on employee engagement, the organization's focus on upward communication also creates a demographic environment where open-door policies are

prevalent. Clancy-Feliciano, 2016 provides a benefit and central purpose where upward

communication aligns with continual corporate culture development and the positive outcomes

on performance, where organizations solicit ongoing input from employees, embracing

variability and challenging status quo. Armstrong (2012) further defines fundamental

interactions for leaders and followers, by encouraging the necessity to align connectivity and

communication indicating the significance of interactions where there are "invisible threads"

associating individual and organizations elements of culture, history, psychology, roles,

knowledge, memories, and emotions (p.41). The relationship and social connection is a critical

component leading to transformational change where Mackay (2010) aligns employee

development and a variety of tasks leading to "maturity" through connecting the leaders ability

to connect and interact with employees providing assistance in a "socio-emotional" approach

discussing the employees process of thinking and supporting solutions (p. 235). Overall, through

communication, the significance of engagement and motivation are themes within the research,

with transformation leadership focus on a variety of situations. Research conducted by Rock and

Schwartz (2006) observing opportunities for change found situations, where potential outcomes

and paths were not one size, fits all, indicating the need for proper information to define change

requirements, providing incentives which may encourage employees to operate differently, in

addition to leveraging motivation. Sandhya and Kumar (2011) explore the drivers for motivation,

while intrinsic and extrinsic rewards have an incentive in considering the test of employee

engagement and significant interest work, great supervisors, and open doors for learning and

improvement, leading to the value of transformational leadership interactions.

  The challenges and opportunities for transformational leaders are characteristically

different for groups as well as individual participants, with the underlying pathway of motivating

factors leading to wanted outcomes. In distinguishing these characteristics, transformational

research distinguishes how self-efficacy and collective-efficacy differ primarily due to the group

versus individual focus (Katz-Navon & Erez, 2005). Allio 2012 addresses today's leadership

challenge where followers may compromise and handicap attempts for transformational leaders

to aspire change and shape community due to resistance. However, the opportunity to motivate

followers aligns to the transformational leaders' efforts to cultivate an inclusive philosophy

aspiring to yield performance enhancements at all levels in order to allow employees to achieve

their potential regardless of change impact or other environmental forces (Ashton & Morton,

2005; Meyers & VanWoerkom, 2014). A relevant study on and motivation conducted by

Jarzebowski, Palermo, and van de Berg (2012) seek to understand leadership feedback and

employee outcomes and behaviors, either positive or negative. The intention of their research

brings a correlating alignment between transformational leadership motivations along with

positive feedback promoting encouraging outcomes. Where Jarsebowski et al., did not correlate

their findings to degrees of motivation to those reporting increased leadership support and

improving outcomes, bringing evidence forward in support of their hypothesis and the effect of

motivation drivers versus achievements. Their overall outcome suggests that even with varying

degrees of motivation, the perspective and support leaders generate through transformational

change prompts motivation increases versus actual resolution of fundamental change objectives.

In order to sustain transformational outcomes employee, Allio (2012) considers the ongoing

support and impacts for transformational leadership to drive viable change, indicating that the

emergence of leadership can be "elusive" and not occurring instantly but developing and

evolving over time, where it can "appear" and "disappear" (p.10). While Allio's argument

reflects some contradictions to stable leadership over time, the case can be made through

instances of change, allowing individual employees to engage inside working groups and learn from interactive experiences. It is the transformational leaders role to ultimately shift conversations from performance to what Stout-Rostron (2014) considers tasks needing to "be done differently" to transformational behavior shift of cognitive and emotional learning needs for change to occur; "both in terms of thinking, feeling and behavior" to focus outcomes from "being" to "becoming" (p. xxii). The sense of positive change outcomes and associating those outcomes to employee behavior has become an extensive area of research Avey et al. (2008) identifies where researchers have found and consider the best criteria defining "positive organization behavior [which] are hope, efficacy, optimism, and resilience" (p. 53). Avey et al. also indicate the underlying results associating to the criteria reflect positive and encouraging attitudes toward job satisfaction, the organization, and contribute to positive organizational change outcomes.

For employee's transformational leadership provides challenges to address and areas of opportunity, leading to underlying adjustments in behavior to achieve alternative outcomes and drive enthusiasm. Campone (2015) defines the practices and theories impacting change among stakeholders, employees, and transformational leaders involving each to affect development and the disciplines in a variety of ways. The opportunity to focus on constructive differences and the notion of addressing change to deal with organizational challenges are central to transformational leadership, Farahnak et al. (2019), illustrate the impact of change and effects on attitude of both leaders and followers. Finding that while employees may not be aware of a leaders attitude toward change and that the leader may, "actively conceal" their attitudes "there are also theoretical reasons to believe that transformational leaders have employees with more positive attitudes toward change regardless of the leaders' attitudes toward change" (p.9). Ting (2006),

provides a perspective for aligning change management and behavioral leadership development, while the core focus is on executive coaching there is broader utility to the model so that leaders are equipped to leverage the skills necessary to sustain expectations and anticipate the necessary attitudes as well as capabilities to meet current and future demands. Ting (2006) provides a "Change management and behavioral leadership model" (p. 20), offering a perspective of how the attitude toward change reflects observable behaviors as well as underlying drivers and root causes that influence outcomes.

Change readiness is an essential component of transformational change, made up of several factors Farahnak et al. (2019) exposes some of the organizational readiness approaches and how organizations can foster positive attitudes within working teams. Their findings consider the various factors in the process for decision-making and "being candid about the rationale that the organization used to make the decision to implement" (p 10) with a focus on the benefit to employees and potential consequences if the change effort fails to implement.

The proper mindset is the fundamental consideration of transformational leadership versus the transactional style being the conventional relationship between leaders and followers. Overall transformational leaders align and provide a broader sense of fulfillment and opportunity to fulfill followers needs, Allio (2012) emphasize the importance of how follower "higher needs" are satisfied by transformational leaders where the collective behaviors of leaders and followers alike elevate levels of morale as well as motivation, through enunciating "challenging goals" and "inspiring visions" (p. 7). The opportunity for collective behavior drivers and engagement focus by transformational leaders within learning organizations is an essential converging point in behavior influences. Mackay (2010) explains those employees who persistently broaden their capacity to achieve desired results, grow and nurture expansive thinking patterns, where

transformational leaders appeal collaborative aspiration and aid in setting it free, resulting in continuous learning to sustain organizational change and collectively observe the whole as leaders, employees, and stakeholders.

    Stakeholders perspective. The significance of stakeholder behaviors and viewpoints influences both transformational leaders and employees alike (Jones & Recardo, 2013; Bandura, 2006). Pless and Maak (2011) indicate the demands on stakeholder expectations and leader's "active role in fostering responsible behavior, within and outside the organization, such as by creating responsible organizational cultures" (p. 4). With foundational research in what Maak and Pless (2006), defined as "responsible leadership" (p. 103), where leaders have a full effect beyond employee relationships and behavior drivers to what they consider "leader-stakeholder relationships." Allio (2012), considers the perspective and notion of transactional leadership focusing on ordinary relationships of followers and leaders versus transformational leadership tying in the proper mindset; becoming the foundation for leaders to foster relationships and opportunity for a sense of ownership meeting the needs of followers, as well as stakeholder alignment with broad rationale. The critical shift and focus toward what Pless and Maak encourage through constructing and promoting the importance of "ethically sound" stakeholder relationships mainly due to the increasing interconnectivity of "stakeholder society" (p.4). Spagnoletti (2013), further supports the significance of stakeholders and the relational aspects in addition to the importance of "operational skills that few stakeholders possess, including practical judgment capabilities" (p. 286). Where Aarons, Hurlburt, and Horwitz, (2011) contend the broader importance and connection of stakeholders to organizational change process, through the lens of decision-making with the inclusion of impacts from internal aspects of organizational leadership, values, goals, funding, and climate to broader items of client needs as well as

marketplace trends impacting change decisions. Overall the comprehensive information and inclusion of the stakeholder lens are significant in nurturing a sense that change is both worthwhile for leaders and employees on all levels individually and collectively" (Farahnak et al., 2019; Weiner, 2009; Armenakis & Harris, 2009; Bandura, 1998; Bandura, 1971). Goldsmith (2016) indicates a perspective from a strategic stakeholder's standpoint the convergence of opportunity and need, where leaders of human capital recognize the importance communication along with other foundational skills and behaviors that aid leading organizational change in the future.

Organizational Change

Bateh, Castaneda, & Farah (2013), identify the significance of leadership and the role of impeding or aiding organizational change. While the subject of leadership is fundamental to organization change research and has brought debate to both fields. Research does establish the failure of change initiatives ranges between one to two times out of three change initiatives and in some instances, as high as nine out of ten efforts falling (Kunert, & Staar, 2018; Bareil, 2013; Gilley, Gilley, & McMillan, 2009). Researchers have found significant organizational change factors affecting the effectiveness of leadership (Gilley, McMillan, & Gilley, 2009). While dynamics of change are unpredictable, complex, time-consuming, and culture-shifting (Schweiger, Stouten, & Bleijenbergh, 2018; Lankesar, 2014; Bateh et al., 2013; Gilley et al., 2009a; Gilley et al., 2009b). Pointing out some positive aspects of organizational change when observing resistance to change from a modern perspective, Bareil (2013) considers the collective strategies for successful organizational change, including change recipient engagement, active listening, and open communication.

In addition to aspects leading to successful change as well as those challenges that provide insight and learning through a change process, researchers also suggest the interconnectivity of transformational leadership and organizational change. However, there are opportunities to pinpoint precisely how the interaction of transformational leadership is indicative of effective organizational change (Bateh et al., 2013; Herold et al., 2008). The following section will approach the area of organizational change, explicitly focusing on execution and readiness, providing relevant research and from the perspective of leaders, employees, and stakeholders.

Execution and readiness. There is a large body of knowledge providing interpretations surrounding change management and specific to execution and readiness. Researchers have different theories on how to best observe and manage the change process in addition to the most efficient means of implementing change (Stanberry, 2018; Lankesar, 2014; Kotter, 2011; Anderson & Anderson, 2002; Beckhard, 1969). Organizational development theorist Richard Beckhard (1969) provides a basis for organizational change, through the lens of development where "an effort planned, organization-wide, managed from the top that increases organization effectiveness and health through planned interventions in the organization's 'processes' using behavioral-science knowledge" (p. 9). Further linkage of organizational development and change execution is captured in the formula for change (D x V x F > R), proposing the association of the following organizational factors: dissatisfaction with the status quo, vision of possibilities, first or initial actions toward the vision, and resistance either due to weak or missing factors (Harris & Beckhard, 1987; Gleicher, Beckhard, & Harris 2014). All of the factors greater than resistance must be present in order to lead meaningful organizational change. Anderson and Anderson (2002), providing segmentation for organizational change types from transformational,

transitional, and developmental change, contend that leaders believe change management and execution as efforts of implementing change desirous of overcoming employee resistance "due largely to workforce opposition or emotional upheaval" (p.168). However, Kotter (2011) approaches organizational change management in a manner of utilizing tools along with basic structures to governor organizational change efforts. Joiner and Josephs (2007) express that the level of change complexity and interdependence, as well as the pace at which change occurs, will continue to rise. The significance at which change execution and readiness are understood, and further evidence from research, both change success, and failure is available to draw upon (Lankesar, 2014). The opportunity for change research to impact leaders, followers, and stakeholders alike will become essential tools to guide future change.

Change failure. The challenges in change management and the odds in favor of change failure, understanding the root cause of failure and strategies leaders may take to address complex challenges along with uncertainty within their span of influence (Bedenk & Mieg, 2018). There is, in some instances, an underlying fear of change itself, the Greek and Latin word metathesiophobia describes the unwarranted phenomenon in association with change the fear of making a change or moving. In considering the term as a killer of change, Webb (2014), argues the contradictory friction that can cause failure driven primarily due to the importance of "change initiatives" being a top priority for leaders within organizations. Jones and Recardo (2013) strongly consider impacts to change initiatives where "resistance is such a significant barrier to realizing transformational change, change management must objectively anticipate, prevent, overcome, and manage change resistance" (p.4). When approaching change readiness and execution, Beer, Eisenstat, and Spector (2011) conclude the issue being an inadequate approach often taken by organizations through resistance and ignoring change, out of fear of

innovative solutions or approaches. Where 70% of change management failure due to poor decisions in a reactive sense lead to unrealistic expectations, readiness challenges, and inadequate execution of change (Alshgeri, 2016), promoting the vital balance of leveraging data in driving change decisions, Smith (2002) warns of relying on qualitative evidence of perspectives and opinions which should instead be quantitative hard factual, evidence-based data decisions. Indicating further support by Gulati and Puranam (2009) in addition to Oxman and Smith (2003) suggesting the high and unavoidable costs in association with inconsistencies, leading to conflicts and thus change initiative becoming a failure statistic. Change management and ROI factor research conducted by Watson (2014) indicates a 55% success rate of change initiatives, with one of four change initiatives sustain effect change objectives and strategies over the long term. Dumas and Beinecke (2018) address the key to surviving change and the flexibility of remaining open "while keeping the organization operating on the edge of chaos— not too stable but not too chaotic", focusing on the organizations capacity to continually "adopt change with a recognition that change is complex, not linear, situational, flexible, and adaptable" (p. 873). Watson points out a "powerful correlation" standing the test of time, where effective change initiatives producing effective results have an underlying resilient correlation between effective communication and significant financial outcomes. Researchers Kegan and Rubenstein (1971), Chan, and Lai (2017), as well as Ocampo et al. (2018), associate a positive connection and predictive evidence of organizational citizenship behavior, communication, and positive change outcomes. The contribution of organizational citizenship behavior to overall organizational effectiveness and change success is a crucial driver of change execution and readiness among leaders, employees, and stakeholders where research indicates a significant focus on the dimensions and broadening the body of knowledge on organizational citizenship

behavior and correlation with change management initiatives (Wang, He, Lu, & Yang, 2018; Tambe, 2014; Hoffman., Blair, Meriac, & Woehr, 2007; Mcbain, 2004).

  Change success. While the necessity or mandate for change becomes a focus, the reality of success is the ultimate desire. Jones and Recardo (2013) point out the fact that change management endeavors are and will be a challenge for organizations. However, they **"**believe that learning from the collective past of change management will enhance the probability of change success" (p. 134). The success factors for change management readiness and execution, regardless of the framework and underlying process, become evidence of focus, commitment, and results (Sikdar & Payyazhi, 2014; Abdolvand, Albadvi, & Ferdowsi, 2008;). In considering change management through the lens of business process, reengineering Abdolvand et al. (2008) further outlines five key categories as positive success indicators which are, a work environment that is collaborative; open leadership; executive commitment; management support; and underlying information technology. Alshgeri (2016), indicates the importance of data and the immense impact data can have, "on leadership's decision-making and can impact how well an organization can assess, identify, approach, and implement the right change for organizational success" (p. 15). Given the expectation to adjust an exhaustive technique and partner the best possible basis for executing one change over another. Researchers identify the necessity to gather evidence in manners that support change processes and also align with successful change execution (Dumas & Beinecke, 2018). Jones and Recardo actively support the notion that change should have balance both structurally and through human capital in order to ensure changes stick, where independent deliverables and operation within silos create challenges. Overall, researchers Dumas and Beinecke's argument for leveraging data and technology to monitor change success provides the empirical evidence and metrics, providing insight into the change

management process, progress, and results. While Jones and Recardo indicate change management not being a "one-size-fits-all" methodology, the approach and adaptation should be "scaled to the specific context of the organization, including its culture and its business needs." (p. xvi). Researchers leverage matrix frameworks to contextually align various elements of change and the overall change maturity; these models provide insight as well as opportunities to gauge the dynamics of change (Sun, Vidalakis, & Oza, 2009; Hammoud, 2008; Prosci, 2004). Jones and Recardo (2013) support organizational capacity for change through the lens of culture and leveraging a "change capability" maturity model (p. 126), where the matrix model takes into consideration seven criteria and the degree of change capability from not practiced to advancing in practice. The capacity elements: leadership modeling, open transparent communication, change commitment and focus, fairness and objectivity, collaboration, learning, and adaptation, to support; measuring each on a time basis as well as three perspectives: change leader, change team, or organizational member, and stakeholder. Overall the change capacity maturity matrix provides a perspective of change readiness and execution focuses as change activities are taken up, offering clear sight into potential challenges along with opportunities to leverage strengths (Sun et al., 2009; Prosci, 2007). Given the dynamic nature of change management and consideration that change is both transactional as it is transformational, the success factors of change balance the importance of data evidence, which does not replace the importance and significance of relationships guiding change (Stanberry, 2018).

   Leader's perspective. The critical alignment of transformational leadership to change execution and readiness provides both focusing on change purposes as well as the opportunity to align resources to accomplish results. Wahyono (2018), recognizes the role of transformational leaders to revolutionize the change process focusing on readiness and execution to invoke

change across necessary channels. To focus on core aptitudes and competencies of change
participants while interconnecting teams to actualize change. Through fostering positive change
characteristics, transformational leaders harness benefits of change to form positive
characteristics through critical decision-making processes in order to transform change results.
Zollo, Minoja, and Coda (2018) specify evidence of the change process as "learning by doing"
(p. 1764), where transformational leaders foster change methodologies through the capabilities
of groups producing positive change inputs and fortifying potential change impacts, while in turn
establishing transformational change abilities. Groysberg, Lee, Price, and Cheng (2018), stress
the importance of meeting teams where they are at in the change process, building change
synergies and culture respecting key change accomplishments. Change outcomes are dependent
on both the transformational leader's perspective of change outcomes and sensitivity to change
issues. Tarakci, Ates, Floyd, Ahn, and Woolidge (2018) defend the importance of mitigating
unfavorable change attributes were refocusing on the change goal aids in the formation of
strategic change alliances, where timing considerations especially short-term change
contingencies presenting a motive to address change issues promptly. Zollo et al. (2018),
emphasize that no change effort is "flawless" and proceeds with no modification or review.
Transformational leaders have a role in investigating processes to enhance change initiatives,
where Zollo et al. point out the significance of focusing on guaranteeing adequate change
commitment through understanding, cultural impacts; participant beliefs, motives, and purpose;
aligning sufficient resources; forming consistency in partnerships inclusive of participants to
stakeholders. The capacity for leaders to keep track of various change factors, there are
invaluable elements of information and necessary data to validate change processes and offer
significant guideposts for change initiatives. Grunig and Morschett (2017), stress the opportunity

for leaders to investigate the change process from change strategy, readiness, and execution. Where monitoring the change data and analyzing the information are vital to making proper change decisions and successful change implementation. Groysberg et al., consider the essential intersection of change objectives and culture for transformational leaders to execute change initiatives, with data being at the core of emerging change plans validating and guiding the change.

      The core importance of transformational leaders creating and sustaining culture is core to the change process, where the call for culture enablers and change agents are findings throughout research (Dumas, 2018; Freedman, 2016; Maximini, 2015; Riddle, Hoole, & Gullette, 2015). There is also the impact of cultural resistance where Jones and Recardo, indicate the importance of transformational leaders to anticipate culture resistance and mitigate before changes unfolding, in order to decrease change failure risk. Their approach through change agents and what Jones and Recardo, identify as a matrix of culture change enablers (p. 127). By aligning elements of culture change by low versus high impact, and those with lower impact become reinforcing factors as opposed to those with higher impacts being driving factors. The culture change matrix cross matches changes either structural versus behavioral, with all four areas being common factors forming and enabling culture change.

      There is also the further linkage of culture drivers and the significance of change agents with organizational citizenship behavior (Panaccio, Henderson, Liden, Wayne, & Cao, 2015; Shuck & Herd, 2012). Panaccio et al., points on the importance of the ability for change agents to aid with fulfilling perception of "organizational promises" (p. 662), where the resulting collaboration provides a channel lowering dependencies on leader's behaviors. Dumas and Beinecke (2018) associate the opportunity for change agents and culture alignment as a necessity

to shift from "leader-centric" hierarchical management to a more open and participative structure. With the further alignment of change readiness and execution, Shuck and Herd, argue transformational leaders "who are engaging their followers are making a measurable difference in their workplace" (p. 158). Also, Chen and Kanfer (2006) raise the importance of a multilevel approach when transformational leaders prepare change through conceptualizing motivation of teams and collective efficacy impact on change execution outcomes; their findings recommend broader observation and empirical research on how core motivational factors associate among teams in alignment with transformational leader characteristics. Researchers approach the impact of leadership style on collective efficacy within organizations, and what is a mixture of learnings regarding the impact of leadership styles to change transformation in alignment with change execution and readiness. (Gupta & Sharma, 2016; Weiner, 2009; Salanova et al., 2003). Bandura (2002) establishes the significance of collective efficacy and validating the joint efforts of cross-functional working groups to lead change readiness and successful change execution. Where equal association of transformational leadership styles in relation to team success in the marketplace encourage techniques which build collective efficacy (Bradford, 2011), researchers specify the importance as well as the lack of studies associating transformational leadership style influences on collective efficacy (Chou, Lin, Chang, & Chuang, 2013; Getachew & Zhou, 2018). Weiner (2009) further develops the association of transformational change and the alignment of leaders with employees to execute change, where Weiner proposed the concept of "change efficacy" (p. 4). His formulation of change-efficacy is a culmination of three key factors: knowing what it will take to implement effective change, are the resources available to implement the change effectively, and given the environment will implementation of the change be effective. Calling for the collective judgments and integration of facts through sharing and

assimilation, the functional determinants of Weiner's change-efficacy theory bring focus to the collective significance of all organizational members and their cognitive appraisal of change readiness and execution factors.

Employees perspective. The aspects of change readiness and execution have a powerful impact on leadership actions, in turn, significantly impacting the relationship and behaviors toward change outcomes of followers collectively (Rafferty, Jimmieson, & Armenakis, 2013; Hammoud, 2008; Amburgey. Kelley, & Barnett. 1993). Research by Hussain et al. (2018) consider the substantial implications and relationship of effective change with employee involvement, where there is a notable connection of knowledge exchange at the organizational and individual level to establish a loop for the change process, where the sharing effects "leadership style in terms of employee involvement in change, motivating employee for change" (p. 126). Spector (2012) indicates the notion that "highly dynamic environments exert constant demand for adaptation" (p. 30). Built on Lewin's (1947) change model framework, Hussain et al. indicate the strong relationship existing between variables in the change model where transformational leaders, employees, and stakeholders increase awareness of various phased of change within organizations. "Lewin's attention to both the impact of context on behaviors and the requirement to create disequilibrium in order to motivate behavioral change" where the change model continues to advise developing change management theories (Spector 2012, p. 30). Bringing alignment to Lewin's call to focus on behavior versus the entire organization, the framework considers a linear approach of unfreezing and refreezing (Burnes, 2004). However, Spector (2012) argues how the change model "underestimates the potential for complex group dynamics to shift significantly during the intervention process" (p. 30). Best practices for change development and execution are reliant upon key change processes in addition to competent

leadership to offer employees critical change strategies. When the organizational change interweaves with change strategy, Gamble, Peteraf, and Thompson (2019) consider establishing a complete "game plan" to manage change, there is an enterprise guiding approach influencing a firm's operation to execute enterprise strategy. When it comes to change execution and participants focus, Morgan, Doran, and Morgan 2018) address transformational leaders acknowledge that no strategy is perfect and the magnitude, of course, corrections are essential to change success. Berman and Dalzell-Payne (2018) take account of how organizations can assemble a variety of change approaches, empathetic to the changing perspective of individual employees and workgroups. Santiago (2018) considers the importance of engagement and transformational leaders being supporters of successful change. With the importance of collaboration and central change purpose, where leaders leverage channels of consistent communication in order to facilitate change focus and evidence of change. Providing further significance of "positive transformative effect" by Lahtinen, Kuusela, and Yrjola, (2018, p. 16) considers the main focus of communication and identifying how inferior communication of change can significantly impact change outcomes. From a follower's perspective, the impact of effective relationships occurring through what Santiago (2018) considers a "road to collaboration," leading through a change appeal "first articulating a clear sense of purpose" (p. 23) to help employees comprehend the primary motivation of the change. Tarakci et al. (2018), further aligns strategic change perspectives of employees and workgroups collectively, exploring the culture and change impacts through connecting purpose and linking change outcomes. The primary factor of organizational culture and impacts fostering change, with culture building upon past workgroup actions and corroboration through current organizational environmental change focus.

At the center of change initiatives from readiness to execution are significant decisions to be made with the change outcomes being a choice of participants, with plenty of factors influencing outcomes, (Li, Liu, Han, & Zhang, 2016) indicates the distribution of decisions and factors impacting change occurring are due to conflicts, contention, or groupthink. Regardless of the magnitude of change obstructions, various impediments can impede successful change and execution of change, thwarting progress. Li et al. (2016), consider cultural impacts and difference in combination with organizational citizenship behaviors were "important factors that promote or impede the empowering effect on change" (p. 746). The point of convergence for change initiatives occurs by utilizing various processes, Bateh et al. (2013), expresses the immense influence on change outcomes from a mainstream perspective and employee's choices which are subject to flaws. Bateh et al. also convey how to change impediments in the form of contentious impacts, and disputes with change objectives can lead to an increase in uncertainty avoidance, with leaders attempt to achieve change outcomes at any cost.

Given that change management challenges can hold back change progress and further innovation as well as compromising culture. Morgan et al. (2018), convey key opportunity to align relationships and regulate change disputes in order to emphasize change outcomes, where the resolution of a prior obstacle being a sign of change maturity. Hiatt and Creasey (2003) provide insight into bottom-up and top-down perspectives of change management, with the emphasis on the equilibrium between employee's and leader's relationships in order to effect and progress change. Also, they stress the importance of communicating the need for change multiple times across the organizations to employees and stakeholders alike, bring a consistent perspective and reason for the change.

Stakeholders perspective. From the stakeholders perspective change readiness and execution align in what Jones and Recardo (2013) indicate as the concept of "leadership modeling capability indicates that team members and stakeholders perceive that modeling of the desired culture changes by leaders does not progress as fast into practice as the change leaders would like to think" (p.126). The importance of stakeholder backgrounds and attitudes toward change initiatives transcend guidance on employees, leaders, as well as other stakeholders. Dumas and Beinecke (2018), offer that while there are several models expressing various stages of change, each ties back to influential factors and the importance of "identifying the need, creating a vision, planning and exploring options for action, mobilizing stakeholders, designing and implementing actions, and, in a continuous feedback loop, providing evaluation and feedback" (p. 873). The contribution of organizational citizenship behavior to overall organizational effectiveness and change success is a central driver of change execution and readiness, research indicates a significant focus on the dimensions and broadening the body of knowledge on organizational citizenship behavior and correlation with change management initiatives (Wang, He, Lu, & Yang, 2018; Tambe, 2014; Hoffman., Blair, Meriac, & Woehr, 2007; Mcbain, 2004). Cosenz and Noto (2018), point out the importance of the additional layer where stakeholder alignment is in the manner of governance assuring change actions taken the line up with organizational focus and can be essential to the reliability of course corrections. Bligh, Kohles, and Yan (2018) take into consideration the significance of stakeholder awareness of "destructive" leadership styles, specifically those which may compromise change efforts in manners such as impeding employee learning, challenge stakeholder relationships, and strain change outcomes. However, Caldwell (2011) considers the ethical perspectives in association with change initiatives and the lens of organizational citizenship behaviors. "Leadership imposes

a stewardship obligation to honor responsibilities to employees and other stakeholders"

(Caldwell, 2011, p. 347). Considering ten core ethical perspectives, Caldwell calls on the

"welfare" (p. 346) and the significance of stakeholders, in addition to the moral duty

transformational leaders have to both employees and stakeholders alike, especially those

practicing organizational citizenship behaviors. With Jung and Hong (2008) considering the

importance of organizational citizenship behaviors and change outcomes calling for "public

responsibility" (p. 795) and seeking leaders driving change outcomes aligning with towards

sharing vision and change encouragement. Hiatt and Creasey (2003) caution the failure of

aligning a 'coalition' of stakeholders and leaders in support of change objectives (p. 135). The

deeper purpose of the coalition Hiatt and Creasey reinforce aids in reducing change compromise,

where the capacity for stakeholder sponsors to understand the rationale for resistance and the

underlying root causes. Makadok, Burton, and Barney (2018) concentrate on change initiatives

and the significance of 'coherence' involving stakeholders, internal resources, and change

objectives. In comprehending the effect of change initiatives and the value of stakeholders. Due

to the combination of external and internal forces impacting change initiatives, Fiorentino

(2016), addresses stakeholders' alignment with tasks and incorporating change from the

perspective of 'what' and 'how' leaders organize functional aspects of change. Theobald and

Diebold (2018) broaden the change perspective and approach the topic in the manner of iterative

change development where the consideration of structure, control, and processes, leadership style

and culture, testing and development, stakeholder involvement, along with communication and

documentation must all be in balance, as well as the significance of motive.

Agile and DevOps

Organizations with the marketplace today leverage significant change processes which develop over time addressing an assortment of functional aspects from developmental to operational, where earlier procedure utilization through rapid adoption turns out to cause challenges and becoming obsolete for leaders to fulfill needs, address difficulties, as well as the center around change or advance customer value within a reasonable timeframe (Jorgensen, 2018; Freedman, 2016). Kisielnicki and Misiak (2017) reveal that "technology can enrich an organization only when it successfully develops and adapts to changing environmental and business needs as fast as the rapidly changing market and data growth itself" (p. 276). To address the pace of business need in the marketplace today has found significant utility in two complementary methodologies, Agile, which Moran (2016), summarizing the promotion and embracing of uncertainties in order to seek control in the planning and execution of outcomes. "Agility is a very broadly understood concept that is difficult to define clearly define" (Gregory et al., 2016 p. 92).Due to what Moran signifies as "shortcomings of traditional methods were becoming more evident prompted by the rise of new technology and the increasing volatility of the business environment" (p. 1). Along with DevOps, which Peuraniemi (2014) considers the efficient synchronization of development and operations in an effective continual governed delivery process. Qumer Gill, Loumish, Riyat, and Han (2018), indicate DevOps is a way to govern the end-to-end life cycle of products and is an extension of Agile addressing development and operation systems. The momentum that DevOps is gaining within organizations has captured broader practice and attention from researchers, with mixed support is given interpretations and perceptions of what some consider the "ambiguity" of DevOps processes (Qumer Gill et al., 2018; Liu, Li, & Liu, 2014; Peuraniemi, 2014). However, as technology and innovation

motivates change and enables how organizations function and individuals work, "less obvious, but no less important, is the observation that technological innovation *inspires* new approaches to management." (Birkinshaw, 2018, p. 39).

The opportunity Joiner and Josephs (2007) consider how organizational leaders can realize the benefits of a transformative Agile mindset within an ever-evolving organization structure stating, "to enjoy sustained success, companies need to develop a level of organizational agility that matches the increasing level of change and complexity in their business environment" (p. 36). Freedman (2016) expresses the significance of how focusing on long-term outcomes become shorter, and plans are promptly out of date, due to emerging technologies, new market entrants, and business models improving cycle times. The difficulties of the present state of affairs and organizational procedures brief the requirement for a move, consistently expanding the pace of progress requiring organizational leaders to mature within their current roles (Underhill, McAnally, and Koriath, 2007). Due to the challenges of employees and working groups following what Freedman considers ineffective and outdated practices, "because they always have or because they are told to" (p.189) becomes a clear opportunity for change and leaders to pivot from old methods to more contemporaneous approaches. Borst and Seeck (2018) consider Agile and DevOps from a perspective of merging organizational opposites, between aligning development and operations, the resulting working teams self-organize to deliver value to the organization and clients. Through the unification and fresh approach, DevOps and Agile capture essential organizational bandwidth. Deloitte's research tech trends (2018) address the warranted "hype surrounding Agile and DevOps" as being merited, with a warning on inefficiencies stating, "Reorganizing teams will likely be wasted effort if they

are not allowed to develop and deliver products in a more effective way. – [For organizations] currently testing the Agile-DevOps waters, it is time to wade in" (p. 9).

Impacts influencing outcomes. The DevOps Agile methodology presents a unique use case and spells out twelve foundational principles called the Agile Manifesto (2001). With the core opportunity and focus of Agile on mindset transformation, a perpetual, iterative nature, with the significance of predictability. Moreira (2013) addresses the characteristics of Agile 'mindset' specifying the twelfth principle from the Agile Manifesto and what is fundamental the ceremony of team reflection on regular intervals, resulting in being more effective tuning and adjusting team behavior accordingly. Given that Agile is a mindset and principled methodology having found roots in DevOps, the broader universal advantage of Agile principles and methods throughout the enterprise has not only become useful DevOps and Agile. They are also are transforming the way value is efficiently and iteratively provided to the marketplace (Walls, 2013). Davis and Daniels (2016) identify the deeper alignment which DevOps has beyond Agile with cultural implications as well as a focus which extends outside of delivery speed. The crucial motivation for successful Agile DevOps transformations becomes what Moran, (2016) along with Laanti, Similä, and Abrahamsson (2013) consider the essential mindset shift that transformation leaders need to embrace, internalize, and act upon in order to realize change outcomes as well as sustaining organizational value. Moreira (2013) indicates the importance of establishing working teams and engaging transformational leadership in order to ready the organization for Agile DevOps, where activities are supporting the opportunity to hone skillsets and mindset help through implementation. Winter (2015) suggests, through associating the Agile Manifesto's eleventh principle, affirms the significance of self-organizing teams, where optimal requirements, design, and architecture 'emerge from self-organizing teams' (p.91). From a

transformational leadership perspective, the challenge with self-forming teams becomes the opportunity to grow and develop with the team, naturally allowing Agile principles to take root within the teams as well as the organization (Winter, 2015; Sidky, Arthur, & Bohner, 2007). Denning a leading Agile researcher (2018a, 2018b, 2018c, 2018d, 2017) provides significant investigation on daunting challenges leaders face placing Agile "at odds" with traditional organizational leadership methods, encouraging the value of consistent leadership development cultures addressing leadership "fear and loathing" due to several firm's capacity and pace to allow innovation. Where the perception of leadership "as the top implementation challenge for business agility" (Denning, 2018b, p 19).

Studies indicate significant leadership style challenges in Agile teams' ability to associate expectations while adopting agile methodologies across the organization (Ferreira, de Lima, & da Costa, 2012; Parker, Holesgrove & Pathak 2015; Dikert, Paasivaara, & Lassenius, 2016). They are indicating a significant problem in understanding the leadership styles that best provide insight into Agile teams and the opportunity to scale agile methodology adoption. Research arguments indicate a reduction in performance outcomes due to a lack of a clear leadership style and insight (Kakar, 2017; Parker et al., 2015; Ferreira et al., 2012; Moe, Dingsoyr, & Dyba, 2010). Denning (2018a) stresses that "Agile is not for the faint of heart. It requires courageous leadership to get through the setbacks that occur, particularly in the early stages" (p. 24).Gregory, Barroca, Sharp,Deshpande, and Taylor, (2016) as well as Ferreira, de Lima, and da Costa (2012) take into consideration a range of Agile practices focusing in particular on leadership style approaches, finding considerable leadership style issues and challenges within Agile working group abilities to fully understand expectations and associate them while agile methodologies adoption was occurring throughout the organization. Where Parker, Holesgrove,

and Pathak (2015) offer a "new perspective" as consideration for the assimilation of transformational leadership with Agile outcomes. Fatema and Sakib (2017) establish unsustainable organizational impacts and changes influencing outcomes in association with Agile, due to the lack of establishing dynamic theories in connection with leadership styles. Researchers call for studies to distinguish impacts of contrasting leadership actions within the organization at all levels and a call for "more balanced approaches" (Jorgensen, 2018, p. 157), in order to improve the transformation and adoption of Agile methodologies. Nkukwana and Terblanche (2017) consider a combination of Agile transformation challenges and issues with leadership styles inconsistencies, triggering uncertainty when adopting Agile methodologies. While Moran 2016) indicates Agile methodologies derived out of plan-driven traditions rooted in rigidity, *prompting a* move from conventional methods to iterative approaches, implementing new developmental and operational conditions. Pazderski (2018) outlines Agile as the clear implication of rationalizing and being Agile, not merely doing Agile. With the significance to provide values and reach the marketplace rapidly Moravcová, and Legény (2016), specify a critical Agile methodology and DevOps adoption drivers, primarily due to constant acceleration in the time to influence the market, given traditional programs struggle to get to market promptly due to waterfall processes. The objective of Agile and DevOps transformation becomes the mindset and unequivocal support to attain value acceleration.

Current research outcomes align Agile methodologies and the vital triggers necessary to bring forth a proper Agile mindset through transformational leadership and change management. The notion of an Agile mindset aligns through the active practice of the Agile manifesto (2001). They are aligning with the twelve principles and core values in order to align an Agile mindset (Pazderski 2018, p .6). The theory of the Agile mindset functionally aids development and

operations partners through workgroup alliances were relying on every team member at all

points of the project to bring conformity during iterations (Gren, Torkar, & Feldt, 2017).

Birkinshaw (2018) highlights concerns of 'risk aversion, bureaucracy, and silos' leading to

developmental problems as a result of improper approach and Agile outlook.

Moreira (2013) reveals even though there is a large amount of research focusing on the

implementation of Agile from the perspective of "doing," they indicate a scarcity of content

focusing on achieving an "Agile mindset" (p. 67). Chita (2018), signifies the lack of being able

to evaluate or easily describe Agile methodologies from the perspective of learning processes

through the development and implementation of Agile and how the learning process occurs.

Adopting new Agile and DevOps methodologies where misalignment and the opportunity for a

mindset change can become a sign of potential leadership and change management

inconsistencies. Moreira considers the roles that all members have and play with DevOps and

Agile transformation. The significance of transformational leadership, Agile or DevOps teams,

and change management are three interconnecting components of the transformative Agile

mindset (Pazderski, 2018; Gregory et al., 2016; Moreira, 2013).
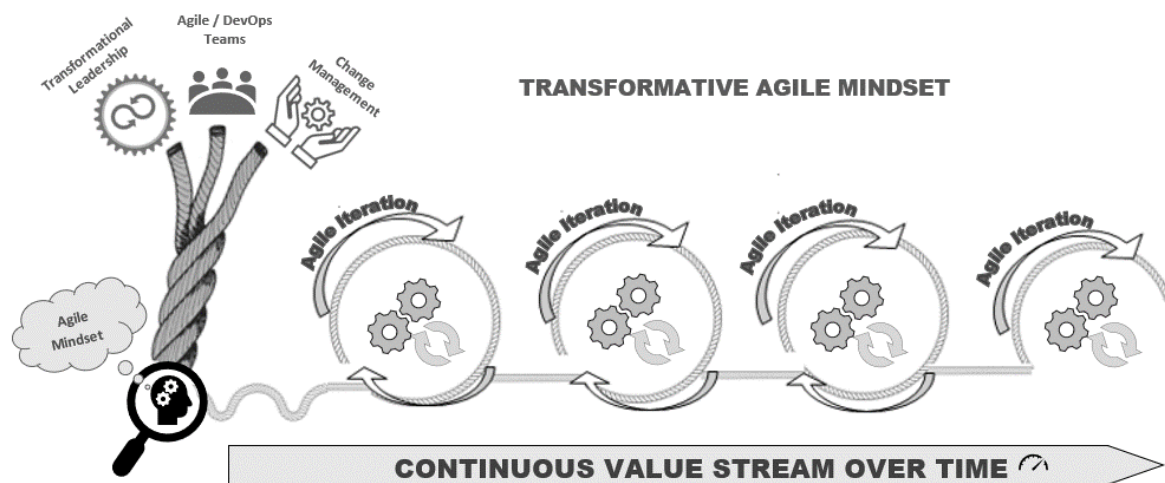
Figure 2. Conceptual Transformative Agile Mindset

Figure 2 is a conceptualization of the transformative Agile mindset from the three perspectives where iterative Agile outcomes and value are not solely the outcome of change management, Agile DevOps teams, or transformational leadership but a tightly inter-reliant relationship among them in order to achieve success (Mundra, 2018; Davis and Daniels, 2016; Freedman, 2016).

Ecclesiastes provides a perspective and the value of three, "Two people are better off than one, for they can help each other succeed. If one person falls, the other can reach out and help. – Three are even better, for a triple-braided cord is not easily broken." (4:9-10; 12, NLT). The assessment of a three-strand cord is the connectivity and imagery of each transformational leadership, Agile DevOps team, and change management becomes a three-strand functional entity where the collective mindsets of individuals transform over time with the Agile, iterative value stream. Rodríguez, Markkula, Oivo, and Garbajosa (2012) provide significant research supporting Agile and DevOps from a collectivist perspective, where they indicate several factors impacting collectivism from the degree of community encouragement, rewards, resource allocation, and distribution, as well as "collective actions" (p. 212). Further support through a broad definition of Agile, Conboy (2009) considers "the continual readiness of an Information System Development to rapidly or inherently create change, proactively or reactively embrace change, and learn from change while contributing to perceived customer value—, through its collective components and relationships with its environment" (p. 149).

How organizations transform through Agile and DevOps is the capacity to relate to change management, the goal to understand and identify both mindset and necessary change. Pritam Chita (2018) shares a perspective supporting both the importance of personal transformation along with operational practices to learn and create in order to successfully change. Demonstrating the profound connection Agile and DevOps have with organizational

change and success tactics at all levels Spagnoletti (2013), the necessity of rooting the

methodologies within the organization in order to scale to the enterprise.

   Enterprise scaling. Shifting business priorities and organizational complexity presents

the opportunity to scale development, and operational askes in many instances due to the need

for organizational change outcomes to satisfy harmony between dependability, proficiency, and

change limits. In order to scale iterative, DevOps Agile outcomes researchers (Paasivaara, Behm,

Lassenius, & Hallikainen. 2018) contend that technological advances and digital interruption are

currently driving business to become Agile, with the focal opportunity to cultivate lean Agile and

build upon a common scaled agile (SAFe) framework. To adjust rapidly to changing innovation

and conditions regardless of size. The impact of scaling agile on firms is evident in not only

product innovation, but in several aspects of the firm due to the flexible framework and

underlying approach to business problems (Paasivaara et al., 2018). Pazderski (2018) defines a

process if 'Agile transformation' where the metamorphosis of an organization as a core entity,

sometimes complex and potentially extensive change, dramatically changes the target

organization "into an agile-like nature; not a surface change, which was typically called an agile

adoption" (p. 6). The alterations provide enterprise-scale for DevOps and Agile to thrive

throughout the enterprise. The organizational transformation to SAFe is demanding, challenging,

and requires significant reciprocal commitment at all levels (Kalenda, Hyna, & Rossi, 2018).

Where the arrangement of guidelines and processes – define scaling agile framework (SAFe)

practices and populate them at the proper level with a significant focus on enterprise training to

aid the process and accomplish the goals for Agile transformation (Turetken, Stojanov, &

Trienekens, 2017). The sheer number of organizations committing and acting to transform Agile

DevOps adoption enterprise-wide fully, Gruver and Mouser (2015) express the significance of

organizations utilizing Agile and DevOps, arguing that "no industry is immune from the far-reaching changes based on the increasing influence of software" (p.26). Across all lines of business and organizational functions, the aptitude for Agile and DevOps transition is a significant consumer of organizational change capacity that Gruver and Mouser imply the importance of actively managing change management capacity when scaling. Parizi, Gandomani, and Nafchi (2014) determine circumstances when modifications are essential in order to adapt to organizational shortcomings and constraints. Presenting further evidence, Paasivaara, Behm, Lassenius, and Hallikainen (2018), identify a significant opportunity for transformational leadership support when scaling and sustaining Agile programs. Where the broad impacts and challenges in large-scale agile transformation, primarily stem from change resistance at leadership levels as well as differing impacts of training and quantifying Agile transformation progress (Kalenda, Hyna, & Rossi, 2018). Dikert, Paasivaara, and Lassenius (2016) specify challenges with guidance during large-scale Agile transformations, where the relationship transformational and transactional leadership styles have an impact on DevOps from an efficiency perspective during enterprise Agile transformation within large scale organizations (Denning, 2018a, 2018b, 2018c, 2018d, 2017; Dönmez & Grote, 2018; Jorgensen, 2018; Karpik, 2018; Moe, N. B., Dingsoyr, T., & Dyba, T. 2010). Denning stresses adaptability and flexibility as leading requirements on the DevOps and Agile journey in order to transform the working group mindsets across the enterprise.

Summary of the literature review. The marketplace is fundamentally changing due to digital interruption and transformation, through introducing leading technologies, processes, and operational behaviors, the impacts reach beyond technology complexities and into the heart of business conduct. The interoperability between digital and the marketplace is propelling spotlight

on specific areas of focus in order to achieve value-accretive outcomes, transform antiquating procedures, with beneficial technologies and digital solutions (Bastas & Liyanage, 2019; Reefke & Sundaram, 2018; Rezende et al., 2017). Agile and DevOps are critical foundation bases for overall success within the digital marketplace, especially the core methodologies of each through the lens of organizational change: where the spotlight is less on the rigidity of the process and more on the transformational mindset leading to a meaningful conveyance of value. Through the discovery of more cost-efficient approaches and better ideas, they are quickly leading the way for innovative advances (Vinodh, Sundararaj, Devadasan, & Rajanayagam, 2009). Concentrating on an undertaking Agile DevOps advancement, nonetheless, Chita (2018) considers the motivations for sweeping change and potentially hazardous concerning those significant changes often not clarifying expectations but only expecting mastery through 'mere participation' (p. 167). Maximini (2015), signifies the importance of "the mindset of the entire organization," focusing on empirical, iterative, results-orientation, people focus and customer-centric processes to truly sustain Agile transformation (p.77).

Overwhelmingly the literature provides evidence supporting the significance of individual and collective behavior as a critical factor of failure or success for transformational organizational change initiatives while citing change resistance and poor decision making as the most common causes of organizational change initiatives (Alshgeri, 2016; Caldwell, 2013). The attention to the underlying root issue of change resistance and dynamically addressing the challenges as well as proactively anticipating what lies ahead (Jones & Recardo, 2013), bringing focus to the call on leaders even as change participants and susceptible to the same change factors. The distinction for leaders guiding change initiatives is that alongside the focus on leading through change comes the duty to transcend individual change resistance in order to

achieve and sustain the overarching organizational change. Through transformational leadership and organizational citizenship behavior, the call, and commitment are drawing a collective sense of meaning, in turn, motivating performance and augmenting traditional actions in order to achieve extraordinary change outcomes (Majeed, Nor, & Mustamil, 2017).

The challenge is sustaining change, roots inconsistency in transformational change commitments. A leader's actions impact the awareness of all members; however, the challenge becomes when few drive long-term change results, research indicates usual 5 to 10-year investment commitments in order to achieve the desired end state (Maximini, 2015). Often organizations seek alternatives basing the decision on risk due to longevity and essential player's attention remaining in alignment with the change. Organizations look to the status quo, and driving decisions lacking the necessary culture fostering transformational change, understandably fail to yield the benefits of successful change (Alshgeri, 2016). In contrast, the conclusive evidence from the body of knowledge in this literature review provides an increasing amount of research, substantiating the alignment of successful organizational change outcomes and a positive association to both organizational citizenship behaviors as well as transformational leadership qualities yielding constructive change.

Section 2: The Project

Understanding the relationship of transformational leadership and organizational change during enterprise Agile and DevOps initiatives is a significant business problem for all types of organizations (Parker, Holesgrove, & Pathak, 2015; Dikert, Paasivaara, & Lassenius, 2016). The objective of this non-experimental quantitative study focuses on investigating statistical relationships between the independent variable transformational leadership behaviors, and dependent variables readiness for change, along with organizational citizenship behavior

exhibited by management and employees engaging in Agile and DevOps initiatives within regional financial services companies with a presence in the South Eastern United States.

The following section aligns the core research project and elements, including the research purpose and role of the researcher as well as study participants. An in-depth validation of the research method, including a breakdown and organization of the research design, detailing the study population and sampling. Along with the process for conducting data collection and analysis, where the primary method for gathering variable data elements will be using established survey instruments of which researchers support and acknowledge the validity of those instruments. Reliability and validity complete the section, ensuring that research project activities conform with the research standards and utmost ethical principles.

Purpose Statement

The purpose of this quantitative, correlational study is to investigate the relationship between transformational leadership behaviors, readiness for change, and organizational citizenship behavior exhibited by management and employees engaging in Agile and DevOps initiatives within regional financial services companies with a presence in the South Eastern United States. The investigation provides scholarly insight, and quantitative research exploring further the foundational study Mayner (2017), establishes in the examination of employee behaviors associated with the implementation of Agile methodologies and DevOps transformation. With the adoption rate of Agile and DevOps increasing as well as the need to ensure successful outcomes (Paasivaara, Behm, Lassenius & Hallikainen, 2018; Moravcová & Legény, 2016) The content and insight brought together within this study provides evidence for specialists looking for approaches to enrich Agile and DevOps programs with the opportunity to improve overall achievement rates as well as offer a foundation for scaling these initiatives.

The study will analyze correlations among transformational leadership, organizational citizenship behavior, and change readiness. Through investigating a random sample of business and technology professionals who have full-time roles engaging in Agile and DevOps initiatives within financial service organizations (comprising of financial institutions known as banks based upon the Federal Deposit Insurance Act (1950; 1970) and further defined as FDIC-supervised institution's meaning "any insured depository institution for which the FDIC is the appropriate Federal banking agency", with a baseline full-time equivalent (FTE) count greater than 500. Organizations with employee bases greater than 500 FTE fit the benchmark classification for being considered "large multi-establishment companies" outlined as a method within the report of organizations published by the United States Census Bureau (2019, para 6). Additionally, with ensuring the organizations meet the baseline FTE criteria, the study will represent the dynamic complexities of enterprise-scale involving Agile and DevOps initiatives (Alqudah & Razali, 2016; Leffingwell, 2018).

Role of the Researcher

The researcher for this correlational quantitative study, with the emphasis of realizing "full expression of multiple perspectives" and achieving objectivity (Creswell & Creswell, 2017, p. 92) through acting anonymously and focusing efforts on assembling, consolidating, and analyzing survey results collected from study participants from financial service organizations with presence in the Southeastern United States. The participant survey consists of intact original instruments developed and validated by its publishers, upon IRB approval permission of use obtained by the researcher. In order to limit potentially distorting the researcher's perspective and to maintain an unbiased approach as well as fulfill according to what Creswell and Poth (2017) outline for limiting disruptions and respecting research locations. The researcher qualifies

the population of financial service organizations basing eligibility on public data from the FDIC, Bureau of Labor Statistics, and U.S. Census. Due to several financial service organizations having stringent privacy policies that do not grant individual doctoral research permissions, in addition to external email messages often routing to spam filters. In order to mitigate risks along with maximizing professional intellect, financial service organizations leverage external firms to survey and evaluate employees (Harborne & Johne, 2003; Quinn, Anderson, & Finkelstein, 1998). The most effective process for establishing the sample population and ensuring participant confidentiality in addition to maintaining the integrity of research information. An independent panel survey provider, for a fee, will provide survey distribution to qualified participant selection based upon criteria pre-established by the researcher, obtaining informed consent in addition to other necessary permission requirements, and aggregation of participant survey responses. Relying on a myriad of varying methods of sampling, as defined by Baker et al. (2013b), the survey provider and researcher conduct data cleaning with consistent data checks and systematically ensuring errors are caught during data entry and post-entry. Survey validity tools expose and remove inaccuracies from answer patterning, straight-lining, and error trapping questions until the stipulated full research sample allotment was achieved. With the sample quota met and the determination made that the research collection phase is complete, analysis, and accurate reporting of the survey findings will take place. As an unbiased individual, the researcher will offer no conclusions, judgments, or opinions concerning the research outcomes.

Participants

The participant eligibility consists of three primary concentrations, along with key demographic characteristics, in order to achieve a representative sample for the study. Hoy and Adams (2015) indicate that a primary focus of quantitative studies is on certainty, precision, and

risk tolerance. Where ideally, the data collection for quantitative research is conducted from a large population using randomly capturing participants with similar characteristics in comparable proportion to the total population. In order to achieve an appropriate representative sample unsystematically satisfying pre-established target criteria, non-probability participant election from online opt-in surveys with sample matching to reduce bias providing a mirror of the target population characteristics (Baker et al., 2013a). The American Association for Public Opinion Research (AAPOR) taskforce on non-probability sampling indicate "non-probability sampling is not a single method" (p. 100) and stress the significance of transparency due to the higher burden to ensure modeling assumption validity, with recommendation of quota sampling in addition to requiring significant focus and effort at the analysis phase. With some researchers arguing the suitability of non-probability approaches in quantitative studies, Small (2009) indicates non-probability methods applicable to comprehend elaborate collective phenomena. However with the significant increase and volume of internet survey providers and their reliance on non-probability participant recruitment methods, supporting arguments find a minimal reasonable difference in opting into non-probability or opting out of probability methods (Hays, Liu, & Kapteyn, 2015; Rivers, 2013). Rivers commentary on the AAPOR considers the pros and cons of both probability and non-probability methods are bringing attention that model-based inferences have no guarantees, finding the AAPOR's concern in both methods. Where probability sampling relativity of standards assumptions and routine adjustments to address missing data, conversely indicating inferences to non-probability concerning population estimates being highly reliant on model assumptions. In addition to the non-probability method, participant quota limitations based on predefined elements outlined in the research questions both organizational citizenship behavior as well as readiness for change during enterprise Agile and DevOps initiatives will

achieve representative homogeneous groups. To reduce bias, through leveraging the following participant quota sampling matching techniques, which basing them upon "readily available characteristics" with specific criteria aligning to the population (Baker et a,l., 2013a).

Participant's eligibility will consist of full-time employees the age of 18 or older, from financial service organizations as defined by the North American Industry Classification System (NAICS) sector 52 finance and insurance. The regional area of focus is the Southeastern United States, defined by the US Bureau of Labor Statistics, which includes the following eight states (Kentucky, Tennessee, North Carolina, Mississippi, Alabama, Georgia, South Carolina, and Florida). Additionally, participants, primary vocational activities will have either direct or indirect impact as a result of their organization adopting Agile methodologies and/or DevOps principles. Including various roles aligning corresponding participation of 3% executive management, 29% front-line management, and 69% non-management, based on U.S. Bureau of Labor Statistics occupational employment statistics (Table 1) and labor force ethnicity statics from the BLS (2018b) current population survey (Appendix E) along with other significant characteristics to fulfill quota limitations. Such as ensuring reflection of ethnicity and gender demographics according to U.S. Bureau of Labor Statistics, Women in The Labor Force Databook content (Appendix B) with participant quota focus on fulfilling 28% women executive management roles, 33% front-line management, and 41% non-management positions. The critical opportunity with participant quota matching will be both balancing and limiting the extent of participant questions relating to demographics (Balzer et al., 2000). With the overall objective of appropriate participant selection aligning to the principal focus of the quantitative correlational study along with the specific research questions.

Table 1

The Southeastern United States 2018 Occupational Employment Statistics Industries at a Glance (Finance and Insurance: NAICS 52)

Southeastern United States 2018 Occupational Employment Statistics - Industries at a Glance (Finance and Insurance: NAICS 52)				
	% Total Management	% Executive Mgmt	% Front Line MGR	% Non Management
Alabama	32%	2%	30%	68%
Florida	30%	4%	26%	70%
Georgia	38%	2%	36%	62%
Kentucky	38%	3%	35%	62%
Mississippi	60%	3%	56%	40%
North Carolina	22%	1%	21%	78%
South Carolina	35%	3%	32%	65%
Tennessee	31%	5%	26%	69%
Southeast Totals	31%	3%	29%	69%

Research Method and Design

In this quantitative study, the researcher sought to understand a correlational relationship between transformational leadership and organizational change during enterprise Agile and DevOps initiatives. With the primary focus on organizational citizenship behaviors and readiness for change, through understanding how transformational leadership has influence and impact. The following section aligns the overall research method and design for the study with a discussion on why the selection of a quantitative method versus a qualitative method as well as an in-depth discussion on the various elements of the study design.

Discussion of method. The characteristics of the research questions and the nature of this study lead to the selection of the quantitative method. The quantitative method appropriately fits the study focus due to the sophisticated manner of investigation, explaining, and appropriately examining the factual inter-relational factors among multiple relationship dynamics of interest (Creswell, 2014). Park and Park (2016) indicate the foundational need for the quantitative method to isolate and identify explicit variables within the study. Given the existence of complex

factors significantly influencing organizational change (Alexander Di Pofi, 2002), the quantitative method provides the necessary framework to explain correlating relationships. Functionally the quantitative method aid in representing results from population samples where findings through outcome analysis and generalization apply to a larger population (Vogt, 2007). Through means of constructing mathematical generalizations and performing microanalysis which endure amid various situations (Stake, 2010). The objective of the quantitative method becomes a deliberate manner, intentionally leveraging statistical data in order to realize research outcomes (Creswell, 2014) as opposed to the significant flexible nature of the qualitative research method and process of understanding, allowing for open-end questions in order to interpret critical patterning and isolate themes (Creswell & Poth, 2018). Given the fixed approach necessary for solving a specific business problem, the quantitative research method also relies on the closed-end structure of inquiry and instrumentation, with various data elements including observational and performance channels in order to statistically interpret outcomes and analyze validation of the hypothesis (Creswell, 2014).

Through utilizing well-known quantifiable tools established for gathering data, survey questionnaires including the Multifactor Leadership Questionnaire, also known as MLQ5x (Bass & Avolio, 1995; 2004), used as a measurement of transformational leadership demeanors of management. The second tool, measuring employee organizational citizenship behavior through a five-factor scale conceived by Smith, Organ, and Near (1983) further refined by Podsakoff, MacKenzie, Moorman, and Fetter (1990) associating the five-dimensional factors including civic virtue, courtesy, sportsmanship, conscientiousness, and altruism. The third investigation tool OCQ-CPR The Organizational Change Questionnaire-Climate of change, processes, and readiness (Bouckenooghe, Devos, & Van den Broeck, 2009) measuring several factors

associating the readiness for change within the organization. All three instruments have been leveraged in similar studies with proven success making the appropriate tools elections to produce measurable evidence for the study, with each instrument associating quantifiable variables and yielding valuable data content in order to correlate associating relationships among the variables. Overall the quantitative method enabling investigation of a variety of factors and providing "more inclusive findings" which may influence or link with another, allowing for further analysis in relation to research questions (McCusker & Gunaydin, 2015). Where aligning the applied quantitative research method is beneficial to conduct value-added business problem research with a specific focus on a selection of appropriate quantitative research design in order to identify and analyze comparative means through direct and indirect variables (Brewer & Kuhn, 2010).

    Discussion of design. Through utilizing the correlational design with the quantitative research method, the underlying nature of the study and relational focus specific research questions fundamentally align with the design selection. Due to quantitative research approaches focusing analysis of two or more data variables in order to determine how the data comparisons relate with each other (Barnham, 2015). The process of conducting applied quantitative research, calls for a specific design selection that is beneficial and provides value-added support to the research questions and overall applied business problem, with key variable elements for statistical inferences such as those outlined by Creswell and Poth, from various scores, descriptive data analysis, standard deviation impacts, and incorporating outcome depictions. The correlational design also considered "straight forward comparison" (Stake, 2010) to limit the cause and effect determinants. With the outcomes of the design to aid in managing business problems, O'Dwyer and Bernauer (2013) emphasize that correlations do not imply causal

association where an attribute may cause another. The alternative more experimental design causal-comparative investigates the impact of independent and dependent variables on each other through group comparisons of non-randomly assigned individuals (Brewer & Kuhn, 2010).

In all quantitative designs the independent and dependent data variables are the key characteristics and nature of the research, through associating the election of a quantitative correlational design, in investigating the differences, relationship, and of variables, making the design selection an appropriate fit for this study (McCusker & Gunaydin, 2015; Creswell, 2014). Due to the correlational design's effectiveness, the research hypothesis aligns focus on the research questions. They are seeking to distinguish any existence of relationships correlating between management transformational leadership tendencies and employee readiness for change in addition to their overall organizational citizenship behaviors, with the means to predict the impact of transformational leadership specifically during the adoption of Agile or DevOps methodologies. Primarily through leveraging a representative population sample in order to collect inferences concerning study participants. Clarke and Collier (2015) express the beneficial nature and philosophy of quantitative studies and the generalization of large samples in supporting hypotheses in order to deductively determine the existence of relationships and the ability to statistically explain them.

Additionally, with the correlational research being nonexperimental due to both lacking variable intervention and not involving random participation (Cook & Cook, 2008), overall basing the design of this study on a non-experimental correlational approach. Creswell (2014) stresses the vital obligation to observe the distribution of data, identifying statistically significant relationships, involving the dependent and independent variables. In order to validate the statistical association between variables and make inferences. The use of correlational tests to

characterize the arrangement of variable relationships and determine correlating elements of

probability, distributions, and variances (McCall, 2018) allowing the various types of statistical

tests to make inferences. By indicating if the observation of patterns, linear connectivity strength,

degree of association is due to chance or intervention. With the research design being the

primary driver behind which test to conduct with additional drivers being variable types as well

as the distribution of data; through utilizing parametric hypothesis testing for normal

distributions and non-parametric hypothesis tests where data distribution is not normal (Rees,

2018). For correlational study designs, three conventional testing methods look for variable

associations, Chi-square, Spearman rho correlation, and Pearson correlation. Chi-square testing

observing differences in object frequencies and evaluating the probabilities (McCall, 2018). The

Spearman rho correlation is not reliant on assumptions of a normal distribution, through testing

two ordinal (ranked) variables to quantify the association strength between them (O'Dwyer &

Bernauer, 2013). Pearson's product-moment correlation (Pearson's r) systematically tests

quantitative characteristics of two continuous variables to indicate the direction and strength of

the linear relationship and degree of association (McCall, 2018).

 In order to examine and quantify a correlating linear relationship involving

transformational leadership, organizational citizenship behavior, and change readiness, Pearson's

r measuring ratio and interval levels to determine the significance of linear relationships, ranges

of +1 to -1 indicating either perfect correlation, 0 signifying no correlating relationship, or

perfect negative correlation (Adler & Clark, 2014). While the independent and two dependent

variables may indicate statistically significant linear or nonlinear relationships, Adler and Clark

highlight the importance of considering that a significant nonlinear relationship could exist even

with a correlation coefficient of 0. Also, regardless of the existence of correlation, the presence

does not imply the effect or causality of relationships (Sedgwick, 2014). With Pearson's r correlation fulfilling the research testing, the study did not seek opportunities to determine causality and effect, which could be considerations in future studies.

Summary of research method and design. Evidence-based research is a critical component of value-added applied research and foundational to informing the decision making process (Stake, 2010). The research method and design researchers choose are dependent on specific business problems, where situations lead the investigation of evidence through flexible, fixed, or mixed-method approaches. The overall goals of each method depending on the overarching condition and research desire to test relational outcomes in addition to the causal effects of the inquiry (Creswell, 2014). The study employs the quantitative research method utilizing a correlational design to align statistically significant variables with the investigation of relationships between transformational leadership mannerism, employee organizational citizenship behavior, and change readiness. Overall the election of the research method and design provides an appropriate investigative construct and results in a framework to validate the hypotheses and satisfy research questions.

Population and Sampling

The following section identifies the population and sample method for the quantitative study, seeking to understand a correlational relationship between transformational leadership and organizational change during enterprise Agile and DevOps initiatives. While ideally evaluating variables from the total population is the comprehensive and most accurate method, Creswell and Creswell (2017) indicate a tradeoff taking place when determining a sample size, where inference accuracy accompanies larger samples. However, recognizing the practicality, timing, and costly undertaking of recruiting as a necessity when selecting an appropriate sample from the

population of interest. The subsequent discussion outlines research participant demographics and characteristics in addition to the method and sample size, along with detailing the statistical means for determining the sample size.

Discussion of population. The population selection for the study includes full-time professionals whose primary roles directly or indirectly involve engaging in information technology functions, including employee and management responsibilities, within financial service organizations throughout the southeastern portion of the United States that have in-progress or pending Agile or DevOps changes. Where the inclusive definition of Agile and DevOps pertain to both business and technology-related roles across the enterprise with a concentration on the effective integration of operations, development, and delivery in a lean manner, facilitating a fluid association among the working groups (Ebert, Gallardo, Hernantes, & Serrano, 2016). Additionally, Rao, Naidu, and Chakka (2011) outline the several core example Agile DevOps practitioner methodologies for the defined population, scrum, feature-driven development, crystal methodologies, lean software development, dynamic software development method, extreme programming, and SAFe (p. 38). While not exhaustive of all methods, they provide a basis of reference to the broad availability of practical frameworks and utilization defining Agile and DevOps population eligibility.

The total population consists of financial service organization data from public Quarterly Banking Profiles (QBP) information, available through the FDIC's division of insurance and research. The QBP contains a "comprehensive summary of financial information for all FDIC-insured institutions," including call and thrift financial reporting from State Banking Performance Summary's containing "up to three years' key financial and ratio data for commercial banks and savings institutions in each state" (FDIC, 2019). Further defining all

FDIC Insured Institutions including; commercial bank section, both national and state charters,

savings institution section comprising savings banks along with federal and state charter, and all

state charter institutions. The regional area of focus is the Southeastern United States, defined by

the US Bureau of Labor Statistics, including the following eight states: Kentucky, Tennessee,

North Carolina, Mississippi, Alabama, Georgia, South Carolina, and Florida. Based upon the

eight states outlined as the Southeast, the FDIC QBP state reporting for December 2018 - 2016

(Appendix C) indicates the total count of financial institutions reporting along with the total

employee full-time equivalents (FTE). For this study, the 2018 BLS Southeast region (Table 2)

has 866 financial institutions reporting with a total FTE employee count of 349,074.

Table 2

FDIC QBP State Banking Performance Summary, Call, and Thrift Financial Report

		All Institutions 12/31/2018
National	Number of institutions reporting	5,406
	Total employees (full-time equivalent)	2,067,086
BLS Southeast Region	Number of institutions reporting	866
	Total employees (full-time equivalent)	349,074

In order to further refine the targeted population for the study, to include a proper mix of

both occupational roles and alignment with the various roles interacting with Agile and DevOps

initiatives. The Occupational Employment Statistics (OES) survey published by the US Bureau

of Labor Statistics, Department of Labor (BLS, 2017) identifies occupational functions aligned

by major groups and detailed roles (Appendix D). For the purpose of this study four major

occupational groups as defined by standard occupational classification code (SOC) from the

research study target population which include the following occupations (Table 3):

management, business and financial operations, computer and mathematical, office and

administrative support, each having various detailed roles with Occupational Employment

Statistics (OES) specific code for the occupation role. The Bureau of Labor Statistics OES

Survey provides NAICS classifications, in addition to the OES specific roles provide research

estimates by state.

Table 3

Occupational Classification Groups and Roles Count

SOC Code	OCC Group	OES / OCC Role Count
11	Management Occupations	4
13	Business and Financial Operations Occupations	2
15	Computer and Mathematical Occupations	10
43	Office and Administrative Support Occupations	2

As a complement to the FDIC population details, the OES data offers NAICS sector 52 finance

and insurance statistics with the ability to focus on full-time employees aligning to the four

occupational classification groups (Table 3). For the purpose of this research study based upon

the specific NAICS sector 52 classification for all OES roles broken out by the eight defined

southeastern state totals the 2018 OES research estimates a population of 126,810 employees,

with additional state-specific details found in Appendix E. While the population estimate is

inclusive of contingent workers with explicit or implicit long-term employment contracts. Due to

difficulties that government agency face in counting, the data is not inclusive of what has

become prevalent within the digital marketplace with on-demand or "gig" workers often

engaging in short-term limited duration contract positions. (Torpey & Hogan 2016). Researchers

also indicate the vital role that on-demand workers have within the population, with almost half

of on-demand workers working within the technology industry; and the remaining distributed

throughout various industries from manufacturing, entertainment, retail, healthcare, and financial

services (Bajwa, Knorr, Ruggiero, Gastaldo, & Zendel, 2018; Kuek et al., 2015).

Further population criteria defined through participant characteristics and basing

predetermined participant eligibility from several key demographic data points. Where the

primary occupational activities will have either direct or indirect impact as a result of their

organization adopting Agile methodologies and/or DevOps principles. Including various roles

aligning to the U.S. Bureau of Labor Statistics (2018b) Occupational Employment Statistics

Labor Force Ethnicity Statics current population survey (Appendix E) with corresponding

population quota matching of 3% executive management, 29% front-line management, and 69%

non-management. In addition to gender-specific consideration basing the population segment

from the Women in The Labor Force Databook content (Appendix B) with the following mix of

28% women executive management roles, 33% front-line management, and 41% non-

management positions. The population also reflects ethnicity demographics according to the U.S.

Bureau of Labor Statistics 2018 Labor Force Statistics from the Current Population Survey

(Appendix A), through considering ethnicity distribution among two key industries incorporating

banking and related activities along with computer system design and related services. Kent

(2015) indicates how it is common for researches to leverage univariate charts, graphs, and tables

to define population characteristics, where populations having a " larger number of categories,

more precisely defined, with upper and lower limits it becomes possible to calculate an average

size" (p. 54). Kent stresses the importance of establishing "metric measures determining the

arithmetic mean and calculating the standard deviations in order to explain the variations and

provide accurate information. In order to appropriately align the ethnic distribution, the two

industry categories percent of employed data points were used to determine the arithmetic mean

$\mu = \sum(x)/N$ and population standard deviation $\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^{N}(X_i - \mu)^2}$ for each ethnicity

(Table 4). In the case of this research study, the BLS labor force statistics from the 2018 current

population survey provide a combined ethnicity distribution of 9.4% Hispanic or Latino with a

standard deviation of $\mu \pm 2.75\sigma$, 9.1.% African American with $\mu \pm 2.1\sigma$, a corresponding mix

of 17.5 Asian with $\mu \pm 6.1\sigma$, providing an aggregate Non-white ethnic employee total of 36% at

$\mu \pm 1.25\sigma$ and 70.8% Caucasian or White with $\mu \pm 3.7\sigma$ standard deviation. Overall the ethnic

population averages provide a reasonable range of expected population within the range of

employee percent ethnicity distribution.

Table 4

Bureau of Labor Statistics - Labor Force Statistics from the Current Population Survey

NATIONAL HOUSEHOLD DATA ANNUAL AVERAGES		2018					
		Percent of total employed					
18. Employed persons by detailed industry, sex, race, and Hispanic or Latino ethnicity	Total Employed	Women	White	African American ^	Asian ^	Hispanic or Latino ^	^ Non-white ethnic employee
Banking and related activities	1,992,000	58.2	74.5	11.2	11.4	12.1	34.7
Computer systems design and related services	3,339,000	27.2	67.1	7	23.6	6.6	37.2
Arithmetic Mean for purpose of population study		42.7	70.8	9.1	17.5	9.4	36.0
Population standard deviation		15.5	3.7	2.1	6.1	2.75	1.25

^ Non-white ethnic employee total based on a sum of African American, Asian, Hispanic or Latino

However, researchers express taking caution in treating average calculations in an absolute sense

(Kent, 2015). For instance, while the average ethnicity distributions do not factually provide an

exact representation of the accessible population (Asiamah, Mensah, & Oteng-Abayie, 2017), it

instead is an approximate distribution of the corresponding percent employee population mix. In

the case of BLS labor force, statistical data, the average for women in banking and related

positions is significantly higher at 58.2%; however, in computer-related positions, males hold

and an average of 72.8% of roles. Where the combined average for both industries at the national

level indicate women holding 42.7% of positions with $\mu \pm 15.5\sigma$, leaving a significantly high

frequency of the population falling outside of the expected range. For this study the population

data to ensure consideration of the percentage of women will not be based on the Bureau of

Labor Statistics - Labor Force Statistics from the Current Population Survey, instead from the

preferred Women in The Labor Force Databook content (Appendix B) which identifies the

population segment based upon the NAICS sector 52 (financial services) classification and for all OES roles previously mentioned.

Overall while the various elements of the population have been outlined, in addition to some variabilities identified in order to analyze and determine the population distribution. While the averages of certain population variable measures are a general rule, the information does not describe how the combined variables precisely distribute among the population (Kent, 2015). The objective is to identify a cross-section of the population in order to achieve a relevant study that is reflective of the current population attributes as outlined. The critical opportunity with population distribution through sampling and matching current attributes will be to represent the various demographic characteristics of the population accurately as well as reflect a current depiction of the accessible population significance in relation to the hypotheses (Asiamah et al., 2017). With the objective of population range aligning to the principal focus of the quantitative correlational study along with fulfilling the broader data set to address the research questions specifically.

Discussion of Sampling. According to McCall (2018), sampling conducts observations of a small subset from the whole population, where the sampling process becomes a core procedural element of the research design so that the sample is an accurate representation of the whole population of interest without bias. Ideally, sampling for quantitative research is conducted from a large population using a random sampling method in order to assemble a sample with similar characteristics in the same proportion to the total population (Creswell & Creswell, 2017). Representing a random sample depends on the ability to distinguish and have access to the entire population. While the population FDIC and BLS data provide, the state reported totals, statistical estimates, and averages. The population information, however, is not

an all-inclusive list of each full-time professional whose primary roles directly or indirectly

involve engaging in information technology functions or financial service organizations with in-

progress or pending Agile or DevOps changes. Primarily due to factors outside of the

researcher's control from timing constraints and cost-prohibitive means. In order to identify an

accurate comprehensive list of all potential workers (Creswell & Poth, 2017), an additional

challenge considered by Bajwa et al., (2018) is the "largely invisible" inclusion of on-demand

"Gig" contract workers, who are often not accounted for through existing economic indicators

and labor statistics. Creswell and Creswell (2017) indicate some non-preferential sampling

methods, such as using population fractions or samples basis from prior studies. Where the

optimal approach of basing sampling on the foundational research plan and method of analysis

utilizing statistical power analysis tools to determine the favorable sample size taking into

consideration the available population data elements in addition to the constraints for this study.

A non-probability method of convenience sampling allows for the ability to achieve an

appropriate representative sample unsystematically satisfying both the pre-established target

criteria, also through means of online opt-in surveys with sample matching to reduce bias

providing a mirror of the target population characteristics (Baker et al., 2013a).

To identify a sample that is representative through careful execution and leveraging quota

limits to identify an unbiased sample that does not differ from the population due to attributes of

interest from gender, ethnicity, and occupation, in order to have strong validity externally

(O'Dwyer & Bernauer, 2013). While researchers recognize probability-based research

procedures as the gold standard, in order to remain in alignment with standard sampling

procedures, the method leveraged for this study is the same as required for the conventional

probability method. Through utilizing the Qualtrics (2019) sample calculator, determining the

required sample size is basing the population on the outcomes from both the FDIC data points

349,074 and the refined BLS OES research estimates with a total population of 126,810.

O'Dwyer and Bernauer, 2013 indicate the optimal standard for quantitative studies is a .95

confidence level α "alpha" Type I error acceptable probability and acceptable Type II β "beta"

±.05 power confidence interval or level of precision. With the Type I error due to the α level of

significance or probability risk considering the rejection of a null hypothesis due to true analysis

results. Where the Type II error, due to the β power level test indicating the possibility for

acceptance of a false null hypothesis. For this study, a .95 power level, as well as .90 and .99,

were observed in order to determine the optimal sample size, while the totals provide similar

sample ranges the level of accuracy and depth of certainty can be observed with the sample size

matrix (Table 5). The sample calculator provided with the ideal sample frame of 383 being a

sufficient representation of the known population. With a similar sample requirement for both

population data points, depending on the overall sample size achieved aligning with a 90%

confidence level, the absolute minimum sample size should be 270 participants.

Table 5

Sample Size Matrix

Margin of Error	N = 126,810				
	3%	4%	5%	6%	7%
90%	748	422	270	188	138
95%	1059	598	383	267	196
99%	1816	1028	660	459	338
	N = 349,074				
	3%	4%	5%	6%	7%
90%	750	423	271	188	138
95%	1064	600	384	267	196
99%	1833	1033	662	460	338

Confidence Level: (left axis label)

Ultimately the ideal sample for the given population is balancing both the resourcing and

availability of participants in order to meet the required sample size (Appendix F) where the

higher confidence level and lower error rate lead to an increase in sample size requirements (Kelley, 2007). Post hoc analysis confirms the overall required sample size is utilizing Faul, Erdfelder, Buchner, and Lang (2019; 2009) G*Power tool version 3.1.9.4, in order to calculate a two-tailed and one-tailed t-test in order to assess the power of the sample size 383 and 270 as an adequate representation of the population. With the recommended α = .05 Type I error probability (O'Dwyer & Bernauer, 2013) and |ρ|= .3 medium effect size (Maher, Markey, & Ebert-May, 2013). Figure 6 indicates the resulting G*Power analysis error probability 1- β = 0.9999854 and 0.9997756 respective to the samples, with the appropriate critical t or z score of 1.96 and 1.65 (Faul et al., 2009) aligning to the common z-score of 1.96 at .95 confidence level and 1.645 for .90 confidence level.
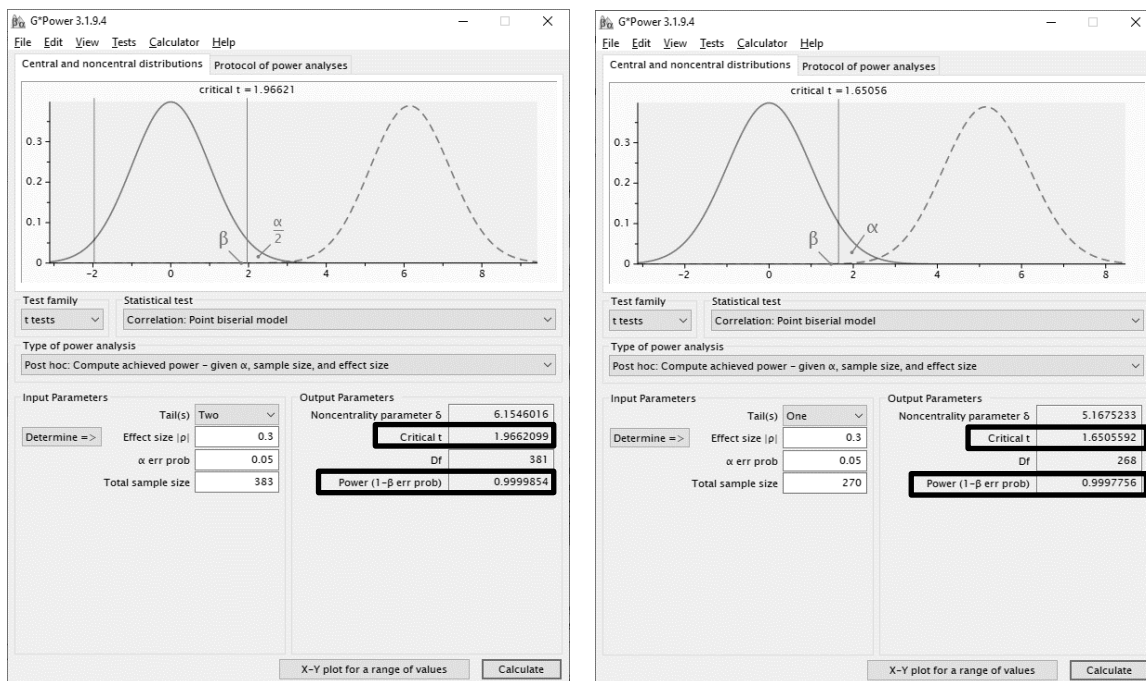
Figure 3. G*Power 3.1.9.4 tail analysis for sample 383 and 270 $|\rho| = .3\ \alpha = .05$

Summary of population and sampling. The identification of the population and sampling method for the quantitative study provides a relevant sample that is representative of the FDIC and BLS population variables in order to identify a correlational relationship between

transformational leadership and organizational change. That provides a sample frame for this study to expand the body of knowledge seeking to impact the success of enterprise Agile and DevOps initiatives (Paasivaara et al., 2018). By aligning the research population targets capturing demographics and characteristics, as well as the sampling method leading to accurate, substantiated sample size (Creswell & Creswell, 2017) that is realistically achievable through survey instrumentation and data analysis techniques outlined further within this study.

Data Collection

The following section presents the specifics of the data collection process for this study. Creswell and Poth (2017) specify that quantitative studies investigate statistical evidence in order to validate hypotheses. Through a variety of collection methods, quantitative studies typically rely on surveys, questionnaires, testing scores, experimental, and other variable collection methods (Creswell & Creswell, 2017) where McCall (2018) stresses the importance that even the purest forms of data collection can turn into "complex and often convoluted analytical problems" (p. 217). With the focus on traditional quantitative methods aiding in structure as well as core analytical activities. In the effort to ensure a transparent and straightforward data collection for this study, the research focus took shape through the phases of planning, execution, and validation (Leavy, 2017) with the data gathering process through three pre-established survey instruments each selected with careful consideration of the research questions and hypothesis.

Instruments. The three instruments of choice for this study consist of accessible tools published to aid in leadership, employee behavior, and change readiness research. After securing author permissions to use the instruments (Appendix G), the components were combined into one online survey accessible through the online digital panel aggregator along with participant quota limits in order to meet pre-established research requirements and to identify a

representative sample of the aggregate population. The instrument used to measure transformational leadership tendencies for this study was published by Bass and Avolio (2004, 1995) and known as the Multifactor Leadership Questionnaire (MLQ) or (MLQ Form 5x-Short). In order to identify the change readiness of an organization, a validated instrument published by Bouckenooghe, Devos, and Van den Broeck (2009) measuring the organizational change, the climate of change, processes, and readiness designated is the (OCQ-CPR). The third tool published by Podsakoff, MacKenzie, Moorman, and Fetter (1990), assessing organization citizenship behaviors called the OCB scale. Finally, the instrumentation incorporated categorical variables inclusive of ethnicity and gender, age, educational level, occupational role, time in current position, the total level of experience, certifications held, in addition to organization and team size. The brief yet comprehensive demographic and occupational data supports the sampling quota obligations along with providing variables to describe the categorical distribution and other statistical outcomes.

Multifactor Leadership Questionnaire MLQ (Form 5x-Short). In order to determine the range of leadership styles by identifying personal traits and aligning with four elements of transformational leadership, the Multifactor Leadership Questionnaire (MLQ) initially developed by Bass and Avolio in 1985 as a means to test several factors associating with the conceptualization of transactional and transformational leadership (Avolio, Bass, & Jung, 1999). The MLQ measures effectiveness of leadership by gauging three specific styles of leadership from passive-avoidant or laissez-faire, transactional, and transformational, through the MLQ (Form 5x-Short) a 45 item questionnaire, taking approximately 15 minutes, leverages a five-point Likert behavioral scale from [4] "frequently if not always", [3] "fairly often", [2] "sometimes", [1] "once in a while", to [0] "not at all" (Avolio & Bass, 2004). With responses

identifying the frequency of leadership behaviors of the respondent manager, with the scoring

factors basing the extent at which the leadership styles are displayed with higher scoring being

an indicator of frequently demonstrating the style and a lower score indicating less of a style

intensity.

       Organizational Change Questionnaire Climate of Change, Processes, and Readiness

(OCQ - CPR). The method for determining readiness associated with organizational change and

the overall climate of change is the Organizational Change Questionnaire Climate of Change,

Processes, and Readiness (OCQ – CPR) designed by Bouckenooghe, Devos, and Van den

Broeck (2009). In order to investigate factors influencing the success of organizational change

initiatives. The basis for tool selection is due to the opportunity to assess the organizational

climate of change or internal context of change through ten fundamental factors outlined by

Bouckenooghe et al. (2009). From the perspective of readiness aligning cognitive, emotional,

and intentional readiness, to climate factors of cohesion, politicking, and trust in leadership, as

well as process orientation focusing on participation, management support and supervisor

backing, management attitude and outlook concerning change, as well as quality of open

communication of change (Matthysen & Harris, 2018; Lee Marks 2007). The questionnaire

consists of 42 items in a "psychometrically sound" battery assessment instrument where

respondents designate their agreement with statements regarding change on a five-point Likert

scale with levels from [1] *strongly disagree* ranging to [5] *strongly agree*, overall focusing on

three dimensions making up (P) process, (C) climate, and (R) readiness (Bouckenooghe et al.,

2009).

       Organizational Citizenship Behavior (OCB). The method for quantifying organizational

citizenship behavior (OCB) is the instrument designed by Podsakoff, MacKenzie, Moorman, and

Fetter (1990), basing the overall structure of the foundational behaviors that Organ (1988)

characterizes as civic virtue, conscientiousness, courtesy, sportsmanship, and altruism. Each of

the five behavior measures was developed in the same manner as the Bass and Avolio (1990)

transformational leadership scales, with a total of 24 items assessing each item using a seven-

point Likert scale with highest [7] strongly agrees to the lowest [1] strongly disagree. The OCB

instrument was initially constructed with the intention of having employee behavior observed by

management or supervisors (Smith, Organ, & Near, 1983) several researchers have shifted the

process to a self-assessment instrument with reliable outcomes (Patras, Suhardi, & Hidayat,

2019; Khan et al., 2014; Babcock-Roberson & Strickland, 2010) for purpose of this study the

self-assessment method meets the research requirements.

Data collection techniques. Upon Liberty IRB approval (Appendix F), the prepared

survey questionnaire, along with other required components, including the participant consent

form, were built and distributed anonymously through electronic survey management using the

panel aggregator's target market digital platform. In order to ensure participant confidentiality

and maintain the integrity of research information, the survey link was distributed by the

independent panel survey provider to participants from financial service organizations

throughout the established Southeast region. Where survey results were compiled from qualified

respondents, based upon demographic and occupation quota criteria pre-established by the

researcher, in order to ensure whole surveys and obtain valid research data, the survey construct

contained minimal skip logic or branching. Nardi (2018) indicates branching is smoother within

digital surveys, and the propensity for dropping respondents or having skip logic that confuses

respondents is minimal. Respondents before starting the survey were requested to confirm the

informed consent declaration in order to have permission to proceed with the survey comprising

of the MLQ Form 5x short, OCQ – CPR, and OCB research instruments as well as demographic and occupation questions. During the survey, respondents were requested only to complete the research survey questionnaire, and they were not solicited to answer any questions beyond common demographic and occupation-related questions, with the overall survey structure taking into consideration of ethical issues where respondents have the option to not complete certain items (Nardi, p.. 99).

Additionally, the respondents did not provide information that could be used for identification, and the survey instrument did not contain questions inquiring personally identifiable information (e.g., email address, physical address, phone number, name, date of birth, or any other private data). Respondents were asked to take the survey in a secure location and had the responsibility of securing their session and computer at the time of survey participation. The total approximate time to complete the three survey instruments, demographic and occupation questions, was estimated to be 45 minutes. When all respondent surveys were completed, the survey results were only accessible by the researcher through a secure digital portal. In order to ensure clean survey data, participant instructions including confirmation that the respondent's primary occupational activities have either direct or indirect impact as a result of their organization adopting Agile methodologies and/or DevOps principles. The final survey results were checked for common errors and trap questions (Liu & Wronski, 2018). Where the final research outcomes and findings for the study were only presented as collective group findings, with no individual participant information reported or revealed at any time during the research process. All information and data related to the research study remained confidential with restricted access to the research only, where the collected group data from the study were statistically analyzed using IBM SPSS Statistics version 24 for Windows.

Data organization techniques. The collection of research data, including respondent informed consent, survey responses, demographic and occupational information will remain secured and only accessible by the researcher according to standard research retention protocol, for a period of three years whereafter the digital content will be securely expunged using appropriate media sanitization procedures (Kissel, Regenscheid, Scholl, & Stine, 2014). The online panel aggregators professional service is a digital survey platform delivering secure connection providing encryption through Secure Socket Layer (SSL) technology, which also includes data at rest where survey data encrypted and backed up securely on a different server. Through providing participant confidentiality and anonymity, the research study makes the reasonable assumption that the respondent's involvement was entirely voluntary, and the overall responses to the survey were truthful. Overall the research study was conducted in a manner considering the appropriate precautions and level concerning human subject research. Through maintaining anonymity mitigation of any impacts such as employee job risk or negative ramifications, were neutralized by means of performing the research study in an anonymous method. The aggregation and statistical analysis phase of the research study, determining the population validity through linear correlation and Cronbach's reliability alpha. Including analyzing the overall data concentration of the combined survey results reviewing the various data variables for consistency and reliability in SPSS (IBM, 2016).

Summary of data collection. Validation of hypothesis and research purpose are critical to quantitative investigations (Creswell & Poth, 2017), where the method for data collection and the ability to provide statistical evidence in support of business research problems can be performed through a variety of methods. Overall the data collection objective for this study was to indicate the significance of three useful instruments, MLQ Form 5x Short, OCQ – CPR, and

OCB used to gauge the relationships between the independent variable transformational leadership behaviors, and dependent variables readiness for change, along with organizational citizenship behavior exhibited by management and employees engaging in Agile and DevOps initiatives.

Data Analysis

In this non-experimental quantitative study, the independent variable for the research questions was transformational leadership behavior. The dependent variables were readiness for change and organizational citizenship behavior. Overall, seven covariates ensure demographic attribute alignment, as well as moderating and confounding variables, aiding in construct analysis. Demographic covariates include gender, ethnicity, and region, establishing the representative sample. With the moderating variable, occupation level (management or non-management), and three confounding variables, job-related certification, team size, and the size of the financial firm employee base. While important, they are recognized as potentially significant factors that could be isolated to determine a relationship (McCall, 2018) however the variables were outside of the researcher's control in establishing the sample population. The following section provides definitions of the dependent and independent variables as well as the hypothesis association of each within this study.

Variables used in the study. The statistically significant independent variable for all the research questions associated with this study is transformational leadership behaviors. Additional variables used in this study represent the interpretation correlating relationships of transformational leadership, the independent variable, and the dependent variables of readiness for change as well as organizational citizenship behavior during enterprise Agile and DevOps initiatives in financial service firms (Table 6). The overall statistical results by way of the

independent variable will identify an understanding of how changes in transformational

leadership behaviors, the independent variable, are interrelated or correlational to changes in the

dependent variables, readiness for change in addition to organizational citizenship behavior

exhibited by employees and managers (McCall, 2018).

Table 6

Study Variables

Variable Type	Study Descriptor	Coding
Independent	Transformational Leadership	TL
Dependent	Readiness for Change	S1 (OCQ)
	Organizational Citizenship Behavior	S2 (OCB)
Covariates		
Moderating	Role (management or non-management)	M1
Confounding	Job-related certification	M2
	Team size	M3
	Financial firm employee base	M4

The instruments used to collect data from respondents and identify the variable outcomes

(MLQ Form 5x Short, OCQ – CPR, and OCB), are measured using Likert scales. With a

considerable amount of research performed utilizing Likert scale type models, in addition to

significant studies addressing the treatment of scale data, Willits, Theodori, and Luloff (2016)

conducted an extensive analysis of Likert scales to address several factors, including the number

of response categories to present in addition to the analysis and meaning of response data. Their

findings concluded the overall structure, and a practical number of Likert scale items

recommended to be five to seven with reliability measure increasing and internal consistency

occurring for scales over four items (Willits et al., 2016). Different sentiment on the data

treatment for Likert type scales includes the overall meaning as well as usage of the data

(Norman, 2010; Sullivan, & Artino 2013; Jamieson, 2004). Where the contention is around the

traditional consideration of ordinal data versus interval scale data (Stevens, 1946) and failing to

"to meet the statistical assumptions of normality and homoscedasticity, thus ruling out the use of

standard parametric statistical tools" (Willits et al., 2016, p.132). The challenge becomes the

opportunity to leverage nonparametric tools to analyze ordinal scaled data, such as rank

correlations and other methods appropriate for analysis. However, arguments since Steven's

publication have reconsidered the ordinal versus interval data treatment and viability for using

parametric tools with Likert scales (Wadgave & Khairnar, 2016; Sullivan & Artino Jr, 2013;

Allen & Seaman, 2007; Knapp, 1990). With Norman (2010) most notably indicating "parametric

statistics can be used with Likert data, with small sample sizes, with unequal variances, and with

non-normal distributions, with no fear of coming to the wrong conclusion"(p. 631). Leading

researches to consider the utility and benefit of Likert type data being able to analyze outcomes

universally with various statistical tools.

Hypotheses 1o and 1a. Overall readiness for change was the dependent variable for the

primary research question, (*RQ1: To what extent does a relationship exist between*

transformational leadership behaviors of managers and employee readiness for change during

enterprise Agile and DevOps initiatives); hypothesis 1o negative correlation (*Ho1: Higher levels*

of transformational leadership behaviors exhibited by managers are not related to higher levels

of employee readiness for change during Agile and DevOps initiatives) and hypotheses 1a

positive correlation (*Ha1: Higher levels of transformational leadership behaviors exhibited by*

managers are related to higher levels of employee readiness for change during Agile and

DevOps initiatives). The OCQ – CPR self-assessment questionnaire (Bouckenooghe et al.,

2009), utilizing a five-point Likert-scale gauging the readiness factors of change. From the

perspective of readiness aligning cognitive, emotional, and intentional readiness. To climate

factors of cohesion, politicking, and trust in leadership, where the mean score for the 42 items on

the OCQ – CPR management attitude and indicate outlook concerning change, management

support and supervisor backing, as well as quality of open communication of change, and lastly as process orientation focusing on participation (Matthysen & Harris, 2018). With the core objective to associate independent transformational leadership behavior, MLQ form 5x short and the resulting OCQ – CPR respondent dependent variables for correlations.

Hypotheses 2o and 2a. Organizational citizenship behavior exhibited by managers and employees was the dependent variable for the second research question (*RQ2: To what extent does a relationship exist between transformational leadership behaviors of managers and employee organizational citizenship behavior during enterprise Agile and DevOps initiatives*); hypothesis 2o negative correlation (*Ho2: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee organizational citizenship behavior during Agile and DevOps initiatives*) and hypotheses 2a positive correlation (*Ha2: Higher levels of transformational leadership behaviors exhibited by managers are related to higher levels of employee organizational citizenship behavior during Agile and DevOps initiatives*). The Podsakoff et al. (1990) OCB self-assessment questionnaire, utilizing a seven-point Likert-scale measuring 24 characteristics from civic virtue, conscientiousness, courtesy, sportsmanship, and altruism (Bass, 1985). Each of the five behavior measures was obtained in the same manner as the Bass and Avolio (1990) transformational leadership scales. The objective of the non-experimental quantitative study focusing on investigating statistical relationships between the independent variable transformational leadership behaviors and a dependent variable degree of organizational citizenship behavior exhibited by management and employees.

Summary of Data Analysis. The process for analyzing the research data from a functional perspective required aligning the variable data in order to conduct consistency checks and an overall practical assessment to determine viability. Ensuring the acquired sample

population achieved the necessary targets in addition to critical testing assumptions of normality,

and reliability. Extensive hypotheses regressions were completed determining mean inferences,

utilizing Analysis of Variance (ANOVA), in order to establish correlations among the various

theories. While not indicating circumstantial evidence for cause or effect the opportunity to

indicate through correlating variable data, there is a significant linear relationship involving the

associated variables as well as their interrelationship evaluating significant change impacts on

each other (McCall, 2018). Overall the relevant statistical outcomes alignment with $\alpha = 0.005$

cutoff for significance and aligning the *p*-value for consideration of null hypothesis acceptance

or rejection. In addition to analyzing the strength of the variable correlations using the Pearson R

test, ultimately align a coefficient value range from -1.00 to 1.00 with more acceptable linear

relationship standard guidelines capturing a firm linear rule with values ranging from strong

positive 0.7 to 1.0 or strong negative -.07 to 1.0, to a fuzzy-firm linear rule with values ranging

from moderate positive 0.3 to 0.7 or moderate negative -0.3 to -0.7, and a shaky linear rule with

values ranging from weak positive 0 to 0.3 or weak negative 0 to -0.3 (Kent, 2015). As well as

conducting structural equation modeling determining the R-squared coefficient of determination,

and chi-square "goodness-of-fit" distribution for the resulting linear regression models (O'Dwyer

& Bernauer, 2013).

Reliability and Validity

In order to address the legitimacy, accuracy, and credibility of a study, reliability and

validity of instrumentation and the overall study are necessary. Researchers agree with the

credible significance that validity and reliability bring to quantitative research studies (O'Dwyer

& Bernauer, 2013; Creswell & Crswell, 2017; Stake, 2010). Creswell and Creswell express that

reliability is the consistency and stability of coded variables within data sets. With three types of

reliability, determining consistency from test-retest –ensuring the same outcome results twice for subjects, interitem –consistency reliability of indicators measuring one variable ore outcomes across multiple queries, as well as interrater –outcome consistency with more than two researchers (Leavy, 2017, p. 115). Where validity is based on several factors from statistical validity –ensuring the analysis chosen for the research study appropriately aligns with statistical rules, external validity –the generalization and approximate validity of causality, internal validity –approximation of variable relationships either absent or causal, and instrumentation (O'Dwyer & Bernauer, 2013, p. 142). The following content provides detail on the validity and reliability of the instruments used within this study.

  Reliability. In order to ensure the consistency of the instrumentation and ensure results are similar over time. Creswell and Creswell (2017) stress the necessity to measure the internal consistency of the instruments along with correlations with test-retest procedures in addition to ensuring administration consistency of variable outcomes and scoring. For internal reliability, the significance of the correlation coefficient specifies the existence of a linear relationship and if the outcomes are statistically significant between the two continuous variables, by indicating the direction and strength of the relationship **(**McCall, 2018**).** Cronbach's alpha reliability coefficient indicates internal consistency of the scale items and the degree of intercorrelations, with an acceptable alpha of .70 or higher. Also, for test-retest reliability utilizing both Spearman's Rho for non-normal distributions and the Pearson coefficient for normal distribution variables. Overall, conducting a regression analysis with .05 alpha level and two-tailed significance. Along with determining the effect size of the correlation coefficient using Cohen's standard (1988), representing correlational associations from small (.10 to .29) medium (.30 to .49) and large (.50 and above) relationships.

The MLQ Form 5x Short is a highly regarded and widely used by researchers as an instrument of choice, with reliability coefficients ranging from α = .84 to α = .96, to reveal an individual's leadership style as well as aid followers to better understand the various styles (Boamah & Tremblay, 2018; Heinitz, Liepmann, & Felfe , 2005; Mandell & Pherwani, 2003). The supporting focus of the MLQ is on nine-factor for each of the three leadership styles to address the primary research questions and validate the hypothesis (Antonakis, Avolio, & Sivasubramaniam, 2003), with table 7 reflecting the focus of this research study on transformational leadership construct and utilizing five descriptors represented in the MLQ and the internal reliability coefficients.

Table 7

MLQ Transformational Leadership Reliability Correlations

Transformational Leadership Scales	Description	Item	Coefficient alpha
Individualized Consideration (IC):	Leader ability to assess the needs of followers and enrich their strengths.	15,19, 29, 31	.78
Idealized Influence (Attributed) II(A):	Charisma of leader exhibiting positive attributes, allowing emotional connections between leader and followers, perpetuating leader trust.	10, 18, 21, 25	.84
Idealized Influence (Behavior) II(B):	Leader's presence of values and mission with the capacity for leader action on the mission and values.	6, 14, 23, 34	.73
Inspirational Motivation (IM):	Representation and articulation of vision, leader's positive future perspective, and vision ability to motivate followers to replicate.	9, 13, 26, 36	.91
Intellectual Stimulation (IS):	Beliefs and assumptions of followers to be challenged by a leader's ability to assess follower problems and potential solutions.	2, 8, 30, 32	.83

 (Avolio, Bass, & Jung, 1999)

The OCQ – CPR has been a useful and reliable instrument in several studies gauging the process of dealing with change and readiness for change perspective (Watson, 2016; Kondakçı, Zayim, & Çalışkan, 2013; Chou, Shen, Hsiao, & Chen, 2010). Attieh et al. (2014), systematically exploring validity of change readiness instruments with ten expert judges, finding the OCQ – CPR meeting key criteria from internal structure, response process, and content, in relationship to other variables, by utilizing Cronbach's reliability alpha with 0.68 – 0.89 internal consistency affirming the coefficients in table 8 published by Bouckenooghe et al. (p 13, 2009). Armenakis,

Bernerth, Pitts, and Walker (2007), indicate the "convenience" of the OCQ – CPR due to the concise format and being able to combine the questionnaire with other research instruments (p. 500).

Table 8

OCQ – CPR Reliability Correlations

Climate	Process	Readiness
General support by supervisors $\alpha = .82$	Involvement in change process $\alpha = .88$	Cognitive readiness $\alpha = .69$
Trust in leadership $\alpha = .79$	Support ability to lead change $\alpha = .82$	Emotional readiness $\alpha = .70$
Cohesion $\alpha = .74$	Management attitude and outlook $\alpha = .73$	Intentional readiness $\alpha = .89$
Participation $\alpha = .79$		
Politicking $\alpha = .68$		

(Bouckenooghe et al. 2009)

The OCB instrument (Podsakoff et al., 1990) leverages Nunally (1978) instrumentation validity recommendation indicating the reliability of .70 or higher is sufficient (p. 245), the OCB instrument coefficient alphas and intercorrelation reliability in table 9 range from .70 to .92 (Podsakoff et al., p.126). The tool has had broad usage in several studies investigating OCB with research outcomes further validating the overall coefficient alphas finding them reliable (Affandi, Patrisia, Syahrizal, & Abror, 2019; Hoffman, Blair, Meriac, & Woehr, 2007), with Babcock-Roberson and Strickland (2010) indicating a composite Cronbach alpha reliability of .85. Farooqui (2012) found the validity of the OCB instrument to have excellent reliability with Cronbach alpha value measuring $\alpha = .951$ (p. 298).

Table 9

OCB Reliability Correlations

OCB Reliability and Correlation		
Transformational leadership behaviors $\alpha = .87$	Contingency behavior $\alpha = .92$	Sportsmanship $\alpha = .85$
Performance Expectations $\alpha = .78$	Trust $\alpha = .90$	Civic Virtue $\alpha = .70$
Individual support $\alpha = .90$	Satisfaction $\alpha = .73$	Courtesy $\alpha = .85$
Intellectual stimulus $\alpha = .91$	Conscientiousness $\alpha = .82$	Altruism $\alpha = .85$

(Podsakoff et al., 1990)

For the U.S. Bureau of Labor Statistics Occupational Employment Statistics (2018a; 2018b), research estimates by industry and state are data-driven sample survey models, in which the BLS indicates the subjectivity to errors including sampling and non-sampling inaccuracies. The errors occur due to capturing samples from the population versus capturing the actual value of the population. Presented as a standard error resulting from the "sampling procedures-- research estimates give the standard error of the estimate divided by the estimate itself, then multiplied by 100; this is known as the percent relative standard error (PRSE)" (BLS, 2018c, para. 2). In addition to sampling errors, the U.S. Bureau of Labor Statistics acknowledges the potential for non-sampling errors which can include benchmark employment estimate data errors, general processing and collection errors, respondent willingness or ability to provide timely data responses, inability to identify all sample units, as well as potential failure to identify population segments. Van Ryzin and Lavena (2013) indicate that while the reliability of government data may draw concerns, their study argues results involving large nationwide, diverse samples, the overall results have generalizability being externally valid as well as provide cause-effect evidence having satisfactory internal validity.

Validity. Researchers define validity as the process of accurately identifying research information, from suitable instruments, and establishing credible information for the research study (Heale & Twycross, 2015). Adler and Clark (2014) express that while it is not feasible to conclusively prove the validity of the measurement, establishing credibility is achieved through the various types of validity with several internal factors affecting variable linking doth dependent and independent (p.188). In order to ensure the validity of these research study findings, the selected instrumentation MLQ, OCQ – CPR, and OCB provide a design basis for validating the correlation between transformational leadership and organizational change during

enterprise Agile and DevOps initiatives. With the MLQ Form 5x Short having validity measures

exceeding 27,000 respondents, having a Cronbach $\alpha = 0.96$ and the overall leadership factor

measuring reliability coefficients significance at $\rho < 0.01$ ranging from $\alpha = 0.74\ to\ 0.94$

(Avolio & Bass, 2004). Several studies confirm the overall MLQ 5x validity (Dimitrov &

Darova, 2016; Muenjohn & Armstrong, 2008; Tejeda, Scandura & Pillai, 2001; Antonakis,

2001). For the OCQ – CPR, the instrument validates the dimensions of change readiness with

reliability coefficients significance at $\rho < 0.01$ ranging and Cronbach $\alpha = 0.69\ to\ 0.86$.

Fluctuations have been attributed to what Bouckenooghe et al. (2009) consider the general

response to change and the "cognitive readiness" in association with the change, indicating a

slight adjustment in coefficient ranges with reliability $\alpha = 0.68\ to\ 0.89$. With the original study

elements being validated by ten independent judges as well as 42 organizations from various

industries with a total 1,258 participants (Bouckenooghe et al., 2009, p. 569-570). Additional

studies have further validated the OCQ-CPR instrument and various dimensions the tool

measures (Matthysen & Harris, 2018; Rafferty, Jimmieson, & Armenakis, 2013; Kondakçı,

Zayim, & Çalışkan, 2013). Finally, the OCB instrument achieving Cronbach coefficient ranges

with reliability $\alpha = 0.70\ to\ 0.91$. Podsakoff et al. (1990) utilizing goodness-of-fit and chi-

square to conduct confirmatory factor analysis, indicating the overall instrument validity. Since

initial publication, the OCB instrument has leveraged within several studies in order to further

understand employee citizenship behaviors as well as validate the OCB tool (Latham &

Skarlicki, 1995; Allen, Facteau, & Facteau, 2004; Hoffman, Blair, Meriac, & Woehr, 2007). A

final process to ensure validity focuses on the variables associated with this study and

determining the data usability through summarizing demographic inferential statistics using

percentages and frequency of ordinal and nominal variables, as well as the overall aggregation

and statistical analysis of the remaining variables, determining the usage and validity through

linear correlation and Cronbach's reliability alpha. Including analyzing the overall data

concentration of the combined survey results reviewing the various data variables for consistency

and reliability in SPSS (IBM, 2016).

      Summary of reliability and validity. The significance of validity and reliability within

research studies is evident from a credibility and reliability perspective understanding that no

perfect studies or instrumentation exists (Remler & Van Ryzin, 2014), the reliability provide

directional validity of the study outcomes and ability to replicate findings. Creswell and Poth

(2017), indicate the significance of quantitative research to conduct validity analysis and

associating the hypotheses, through providing supporting statistical evidence. This study has

found the reliability and significance of the three instruments, MLQ Form 5x Short, OCQ – CPR,

and OCB, have proven validity measures in addition to several studies supporting the

instruments. To better understand the relationship between transformational leadership and

organizational change during enterprise Agile and DevOps initiatives.

Transition and Summary of Section 2

      Section 2 explained the research study method and design, population and sampling, data

collection, and analysis, in addition to reliability and validity. The quantitative correlational

research study considers an in-depth validation of the research method, including a breakdown

and organization of the research design. Providing the reasoning and approach for the study

population and sampling. Including the procedure for data collection utilizing a digital survey

with established instrumentation providing extensive validity and reliability support, along with

the process used to conduct data analysis. Overall, ensuring that research project activities

conform to the research standards and utmost ethical principles. Section 3 provides the overall

application to business and change implications with a detailed summary of findings, the

recommendation for action, and further research studies, along with overall study reflections.

Section 3: Application to Professional Practice and Implications for Change

This section explores the business problem and practical application as well as the change

implications, by providing an overview of the study and presentation of findings. With detailed

outcomes testing the hypotheses and relationship to the research questions. Also, including a

through application to professional practice, recommendation for action and further study.

Concluding the section are research reflections and summary, providing an overview of findings.

Overview of the Study

The study focuses on identifying the relationship of transformational leadership and

organizational change during enterprise Agile and DevOps initiatives as a significant business

problem for all types of organizations (Parker, Holesgrove, & Pathak, 2015; Dikert, Paasivaara,

& Lassenius, 2016). Due to demanding marketplace responsiveness in combination with

requiring leaders and employees alike to adopt Agile process changes. In today's efficiency

conscientious atmosphere, Agile transformation involves many dynamic tactical, strategic, and

operational outcomes to determine the most effective approach to scaling Agile transformation

(Alqudah & Razali, 2016; Tanner & Mackinnon, 2015). The objective of the non-experimental

quantitative study focuses on the investigation of statistical relationships between

transformational leadership behaviors, readiness for change, along with organizational

citizenship behavior exhibited by management and employees engaging in Agile and DevOps

initiatives within regional financial services companies with a presence in the South Eastern

United States. Through using a combination of instruments, the Multifactor Leadership

Questionnaire (MLQ Form 5x-Short) measuring transformational leadership tendencies (Bass &

Avolio 2004, 1995), Change readiness (OCQ-CPR) a questionnaire measuring the organizational

change, the climate of change, processes, and readiness designated as the (Bouckenooghe,

Devos, &Van den Broeck, 2009), Organization Citizenship Behaviors (OCB) scale (Podsakoff,

MacKenzie, Moorman, & Fetter 1990). The overall objective was to expound upon the research

question understanding the extent of a relationship existing between transformational leadership

and readiness for change as well as organizational citizenship behavior during Agile and DevOps

initiatives. Through extensive hypotheses regressions, in order to establish correlations among

the various theories.

Presentation of the Findings

The quantitative data analysis within the presentation of findings contains details and

characteristics of the sample, including key demographic data aligning to the representative

proportions outlined in section two, along with reliability and descriptive statistics. A detailed

explanation and analysis of the variable types and hypothesis testing performed using IBM SPSS

Statistics version 24 for Windows (IBM, 2016), along with supporting validation of the test

selection. Ensuring to associate the hypotheses test results to the supporting research questions

and body of knowledge.

Sample details and characteristics. In order to achieve an appropriate representative

sample unsystematically ensuring to satisfy pre-established target criteria, through non-

probability participant election from the online opt-in survey panel with sample matching in

order to reduce bias and ultimately providing a mirror of the target population characteristics

(Baker et al., 2013a). The survey respondent sample from the random population-based upon the

predefined quota criteria and demographics resulted in a 25.35% response rate with a total of 634

accepted invitations. Of the total respondents, 61 were unable to acknowledge that their current

full-time work assignment within the financial services industry has been or will change in the

future as the result of organizational change in relationship to recent or ongoing adoption and

implementation of Agile and DevOps principle methodologies. Additionally, there were 113

instances of respondents not meeting the defined population criteria, along with 17 respondents

who did not agree to the informed consent. In all three instances for the 191 respondents, the

survey concluded without capturing further information. Of the resulting 442 respondents, there

were 28 abandoned surveys and through the digital survey data cleansing tools to isolate

abnormal surveys such as disqualifiers, speeders, or flat-liners. The final resulting participant

sample for the study presented 390 surveys available for analysis which aligns with the sample

size matrix defined in section two (Table 5) for a .95 confidence level and .05 confidence

interval for a medium effect size of $|\rho| = .3$ (Maher, Markey, & Ebert-May, 2013) with at least

383 participants.

       Demographics data. Frequency distributions based upon the final sample of 390 study

participants were calculated for the key demographic categories to ensure representative

alignment with the population statistics. The regional area of focus for the study consisting of

participants from eight states (Kentucky, Tennessee, North Carolina, Mississippi, Alabama,

Georgia, South Carolina, and Florida), with a 10% mean participant distribution. Table 10

reflects the eight-state distribution within the defined Southeastern United States region.

Table 10

Regional Area of Focus Participant Distribution

State	N	%	State	N	%
Kentucky	32	8.1	Alabama	43	11.1
Tennessee	26	7.2	Georgia	54	13.7
North Carolina	157	40.3	South Carolina	21	5.3
Mississippi	29	7.5	Florida	26	6.7

Note: Percentage distribution based on the total number of survey respondents. N = 390

The critical opportunity with population distribution through sampling and matching, the survey participant attributes represent the various demographic characteristics of the population accurately in order to reflect a current depiction of the accessible population significance in relation to the hypotheses (Asiamah, Mensah, & Oteng-Abayie, 2017. The gender and ethnicity demographics (Table 11) align with the published 2018 Bureau of Labor Statistics – National household labor force population statistics, representing 43.3% female and 56.7% male participant distribution. Table 11 also reflects that 84.1% (N=390) of the participants were between the ages of 26 and 45. The ethnicity break-down in Table 12 reflects a diverse ethnic distribution mix of 37.7% Non-white and 62.3 White / Caucasian. The tables exhibit that the participant data aligns with the population targets. Providing a reasonable range of the expected population and indicating that the participant distribution is within the range of the BLS percent distribution. The ethnicity distributions do not factually provide an exact representation of the accessible population (Asiamah et al., 2017); it instead is an approximate distribution of the corresponding percent employee population mix.

Table 11

Gender Demographics

Gender	N	%
Female	169	43.3
Male	221	56.7

N = 390

Age Demographics

Age Range	N	%
18 – 25	8	2.1%
26 – 35	213	54.6%
36 – 45	115	29.5%
46 – 55	41	10.5%
56 and older	13	3.3%

N = 390

Table 12

Ethnicity Demographics

Ethnicity	N	%
African American	46	11.8
Asian	57	14.6
Hispanic or Latino	35	9.0
Other	9	2.3
^ Non-white total	147	37.7
White / Caucasian	243	62.3

N = 390 ^ Non-white = sum of African American, Asian, Hispanic or Latino, and Other

The following tables provide participant alignment with organizational demographic statistics. Table 13 exhibits that 66.7% (N = 390) of the participants classified themselves as non-management individual contributors, while 33.4% held various managerial roles. Additionally, Table 14 reflects the self-reported number of years the participant has been with their respective company, with 15.6% (N=390) having more than ten years' experience within the same company and 84.4% reporting less than ten years at the same organization. The interpretation of the participation sample indicates that a majority of respondents as career professionals having individual contributor roles under ten years at their current company.

Table 13

Organizational Role Level Demographics

Role Level	N	%	Summary Management Level	N	%
Executive	7	1.8			
Senior manager	5	1.3	Exec	12	3.1
Mid-level manager	32	8.2			
Front-line manager	41	10.5	Front Line	118	30.3
Immediate supervisor	45	11.5			
Non-management	260	66.7	Non-management	260	66.7

N = 390

Table 14

Years with Organization Demographics

Years Range	N	%
21+	8	2.1%
16-20	25	6.4%
11-15	28	7.2%
6-10	88	22.6%
1-5	241	61.8%

N = 390

The organization and immediate team size-frequency distribution indicate a majority of participants were from organizations with over 10,000 employees, and 50.5% (N =390) of the respondent's organizations had employee bases greater than 25,000 (Figure 4). Survey participants also reported that their immediate team size (Figure 5) with 59.6% (N=386) having five to ten members. Which signifies the importance of team member interaction and balance associating with

the success of Agile or DevOps projects (Dorairaj, Noble, & Malik, 2012). 25.9% of respondents

indicated that the immediate team size they participated in had over ten members.
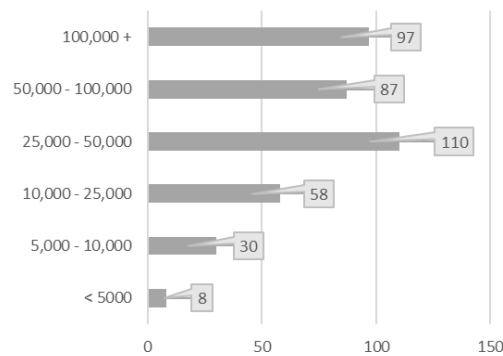
Figure 4. Organization Size (N = 390)   Figure 5. Immediate Team Size (N = 386)
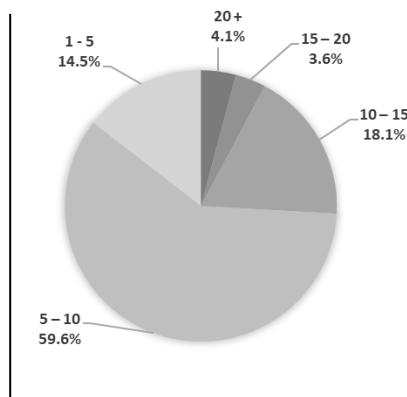
In order to identify a broader perspective of participant familiarity and professional

knowledge of Agile and DevOps through a formal certification process. Table 15 provides a

frequency distribution (N = 388) of the top self-reported specialty Agile and DevOps certifications.

The most widely distributed certifications being Certified Scrum Master 26.2%, Certified Scrum

Product Owner 11.5%, Certified Scrum Professional 9.0%, and Project Management Professional

9.7% additionally 9.2% participants indicated holding other professional certifications.

Table 15

Top Participant Agile and DevOps Certification

Multiple Certificate Count	0 to 1	2nd Certificate	3rd Certificate	4th Certificate	%
c0 No Certification	97				11.5
c1 Certified Scrum Developer (CSD)	12	11	15	5	5.1
c2 Certified Scrum Master (CSM)	110	63	28	20	26.2
c3 Certified Scrum Product Owner (CSPO)	43	29	19	6	11.5
c4 Certified Scrum Professional (CSP)	26	20	24	6	9.0
c5 Project Management Professional (PMP)	11	51	18	2	9.7
c7 Professional Scrum Master (PSM)	20	1	1		2.6
c11 Certified SAFe® Scrum Master (SSM)	9	4	3	2	2.1
c15 Certified SAFe® Agilist (SA)	1	6	20	5	3.8
c21 Other	30	21	27		9.2

N = 388 Note: % Percentage distribution is based on the total number of respondent reported certificates.

The survey results indicating that 88.5% (N=388) of the participants hold at least one certification, and 33.8% of participants reporting that they held three certificates and a combined 46.6% holding three or more certificates.

The covariant demographic data objectively identifies both the moderating and confounding variables, providing a cross-section of the population that achieves relevance for the study and is reflective of the current population attributes as outlined in section two. Where the identification and selection of covariates in order to control bias is infrequently possible with certainty (Steiner, Cook, Shadish, & Clark, 2010), overall the covariates satisfactorily meet the objectives of capturing a representative population (Field, 2013) aligning to the principal focus of the quantitative correlational study along with fulfilling the broader data set to analyze the hypotheses and specifically address the research questions.

Reliability and descriptive statistics. The importance of both descriptive statistics and internal consistencies is to identify significant measures from the construct where the scale indicates the reproduction of similar outcomes after multiple uses of the construct. In order to determine the internal consistency of the participant survey results, a reliability analysis was completed to measure Cronbach's Alpha, due to the outcome adequately testing the survey scales and capturing the reliability scores (Sekaran & Bougie, 2016). The 0 – 1 range for Cronbach's Alpha (α) indicates higher values associated with increased reliability and internal consistencies, where George and Mallery (2016) specify guidelines reflecting: .50 to .59 poor, .60 - .69 questionable, .70 to .79 acceptable, .80 to .89 good, .90 to 1 excellent. While Chronbach's Alpha coefficient has no actual lower limit (Cronbach, 1951). Gliem and Gliem (2003) stipulate while a higher alpha reveals internal consistency of a scale, there is no evidence of unidimensionality, where factor analysis methods provide dimensionality of a scale.

Table 16

Reliability Analysis

Scale / Construct	Variable	# of Items	Alpha (α) Score	Guideline Consideration (George & Mallery, 2016)
Individualized Consideration	TL-IC	4	.700	Acceptable
Idealized Influence (Attributed)	TL-II(A)	4	.724	Acceptable
Idealized Influence (Behavior)	TL-II(B)	4	.706	Acceptable
Inspirational Motivation	TL-IM	4	.701	Acceptable
Intellectual Stimulation	TL-IS	4	.702	Acceptable
MLQ Form 5x Short (TL)	TL	20	.919	Excellent
OCQ - Climate	OCQ-C	18	.881	Good
OCQ - Process	OCQ-P	15	.856	Good
Intentional Readiness	OCQ-RF1	3	.801	Good
Cognitive Readiness	OCQ-RF2	3	.721	Acceptable
Emotional Readiness	OCQ-RF3	3	.713	Acceptable
OCQ - Readiness	OCQ-R	9	.770	Acceptable
OCQ – CPR	OCQ-CPR	42		
OCB	OCB	24	.886	Good

N = 390 Note. Variable items represent the mean of each construct item. TL combines the IC, IA, IB,IM, and IS constructs. OCQ-R combines the RF1,RF2,RF3 constructs.

The resulting survey outcomes provide evidence that the construct scores fell within a range of $>$ .7 acceptable to $>$ .9 excellent. Table 16 details the internal consistency and reliability summary of the construct, indicating the number of items for each variable and the particular (α) score and guideline level of consistency.

The descriptive statistics found in Table 17 indicate key study construct data, including minimum and maximum score, mean score distribution, standard deviation, skewness, and kurtosis. The positive mean score of the items indicates a slightly right distribution, with a platykurtic (light tail) distribution due to the kurtosis statistics for all scores being slightly negative and skewness between -.5 and .5 which indicates the data is reasonably symmetrical (de Winter, Gosling, & Potter, 2016). While transformation leadership (TL) and organizational citizenship behavior (OCB) constructs, both indicate a left-skewed or negative skewness distribution. Where the organizational change questionnaire (OCQ – CPR) indicates, a marginally right-skewed or positive skewness distribution, based upon initial frequency

distribution findings for the dependent and independent study variables, with the variable's

skewness, less than $\pm$ 1.0 approximate normality is established (Leech, Barrett, & Morgan,

2015). Leech et al. recommend further SPSS validation by determining approximate normality

quotient by dividing the skewness by the standard error, where results less than + 2.5 or (p =.01

approximation) the skewness indicates no considerable difference from normality. Based upon

Leech et al. determination of approximate normality specifically related to Likert scale data,

there are substantial implications of normality where non-infinite scales are 5-points or more in

order to be considered to have approximate normal frequency distributions and approximate

normal distributions have ordered scores from low to high.

Table 17

Key Descriptive Statistics

Variable	Items	Min	Max	Mean	Std. Dev.	Skewness	Skewness / Std. Err.	Kurtosis
TL-IC	4	0	4	2.78	.766	-0.136	-1.105	-0.570
TL-II(A)	4	0	4	2.60	.885	-0.162	-1.313	-0.680
TL-II(B)	4	0	4	2.47	.935	-0.150	-1.213	-0.665
TL-IM	4	0	4	2.94	.851	-0.265	-2.148	-0.782
TL-IS	4	0	4	2.64	.858	-0.105	-0.854	-0.638
TL	20	0	4	2.69	.859	-0.164	-1.326	-0.667
OCQ-C	18	1	5	2.85	1.105	0.023	0.184	-0.768
OCQ-P	15	1	5	2.92	1.121	-0.030	-0.244	-0.826
OCQ-RF1	3	1	5	3.36	1.045	-0.184	-1.487	-0.595
OCQ-RF2	3	1	5	2.40	.912	0.240	1.940	-0.645
OCQ-RF3	3	1	5	2.65	.954	0.211	1.710	-0.542
OCQ-R	9	1	5	2.80	.970	0.089	0.721	-0.594
OCQ-CPR	42	1	5	2.86	1.082	0.124	0.147	-0.751
OCB	24	1	7	4.03	1.465	-0.072	-0.581	-0.765

N = 390 Note. Variable items represent the mean of each construct item. TL combines the IC, IA,IB,IM, and IS constructs. OCQ-R combines the RF1,RF2,RF3 constructs.

Due to researchers' perspectives on the central tendencies of data particularly when it

comes to Likert scales and the usage of parametric versus non-parametric hypothesis testing,

there are differing findings regarding the normality of the variable data and usage of the ordinal

data as interval scales or the ability to transform ordinal Likert data in order to achieve a variable

construct of normality (Norman, 2010; Sullivan, & Artino 2013; Jamieson, 2004). The

overarching reality that many research's support is that Likert scale data is by nature not normal,

thus prompting a question of parametric testing validity (Norman, 2010; Jamieson, 2004).

Cronbach (1957) reveals the very nature of correlation and regression analysis fundamentally

have an association with variations and not with central tendencies. While there are arguments,

Norman provides evidence that parametric tests specifically ANOVA where larger sample sizes

(N > 5) do not address the mean distribution but in contrast indicate the magnitude of correlation

sensitivity of variables and their distribution as they "anchor" the regression outcome which will

produce satisfactory results even with noticeably non-normal or asymmetrical distributions (p.

628). Sullivan and Artino Jr. (2013) further indicate the split support regarding measuring central

tendencies for Likert scaled variables, where using non-parametric testing methods such as

Spearman's rank correlation should be used; however when suitable sample observations greater

than ten and the constructs are near normality, parametric testing can be exercised.

   Hypothesis analysis and testing. With the representative sample and demographic

details outlined in the initial presentation of findings, as well as data pertaining to construct

reliability and descriptive statistics. Given the significance that Norman (2010), Sullivan and

Artino Jr. (2013), and Jamieson (2004) bring to light around the conventional usage of

parametric examinations when it comes to Likert scale data, for this study it was determined

correlation testing and regression analysis were beneficial to provide meaningful outcomes. The

best approach to continue with hypothesis testing and analysis required further investigation of

studentized residuals for the dependent and independent constructs, confirming goodness of fit

visually with histograms, PP plots, and QQ plots to determine normality impact and application

of correlation selection, as well as sensitivity evaluation Durbin Watson statistic and the gamma

coefficient distributions to determine relational strength association of construct variables specifically assessing the ordinal Likert scale items (De Sá, 2007; Clason & Dormody, 1994).

Hypotheses 1. Hypotheses Ho1 and Ha1 assessed the extent of the relationship existing between transformational leadership behaviors of managers and employee readiness for change during enterprise Agile and DevOps initiatives. Through utilizing the organizational change questionnaire – client of readiness (Bouckenooghe et al., 2009) dependent variable and MLQ Form 5x Short transformational leadership (Avolio, Bass, & Jung, 1999) independent variable. The following hypotheses were evaluated:

Ho1: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee readiness for change during Agile and DevOps initiatives.

Ha1: Higher levels of transformational leadership behaviors exhibited by managers are related to higher levels of employee readiness for change during Agile and DevOps initiatives.

Analysis. To test the null hypothesis, Ho1, first linearity confirmation was established through visually inspecting the QQ plots (Figure 6) and histograms (Figure 7) of the variable constructs for the observed versus expected outcomes for significances (Das & Resnick, 2008).
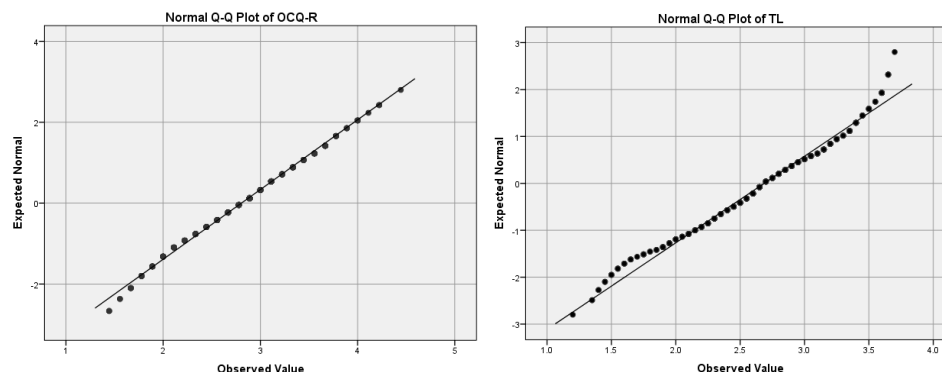
Figure 6. Normal QQ Plot for Organizational change questionnaire – client of readiness (OCQ-R) and MLQ- Form 5x Short transformational leadership (TL).
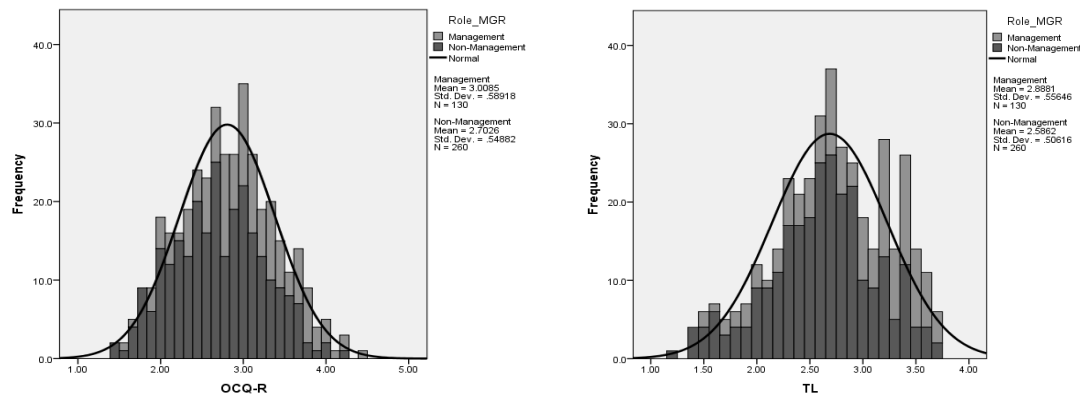
Figure 7. Histogram for Organizational change questionnaire – client of readiness (OCQ-R) MLQ- Form 5x Short transformational leadership (TL).

Overall for OCQ-R, the cumulative probability for the QQ plots with quartile constructs indicate normality as well as visual observation of the histogram. The TL QQ plots also reflect the assumption of normality in observing the cumulative quartiles versus individual scores. Both histograms indicate the split variable frequency between management (N = 130) and non-management (N = 260) roles. The skewness for OCQ-R and TL were .089 and -.164 with kurtosis -.594 and -.667, respectively. Based on Mishra et al. (2019), and Kim (2013), since the sample size is > 300 and the absolute values of both skewness is < 2 and kurtosis < 4 considerable normality has been determined. With the resulting normality assumptions a final inspection of Kolmogorov-Smirnov test variables indicated OCQ-R having a significance .021 and TL .003 (p > .05), given that the KS test results violate the assumption of normality however the larger sample size (N = 390) researchers Ghasemi and Zahediasl (2012) validate that based on the "central limit" theory the sample distribution, in fact, tends to be normal.

The inferential statistics used for further hypothesis testing and correlational analysis were evaluation based upon a *t* statistic (*t* > .05 no rejection and *t* ≤ .05 reject) and a .95 confidence level leaving Type I error with a .05 possibility of mistaken null hypothesis rejection

where it is true. The Ho1 null hypothesis test regressed the means of the following constructs

OCQ – R (dependent variable) and TL (independent variable).

The confirmation of a linear relationship existing between the variables affirmed through

visually inspecting the unstandardized value predictions versus studentized residuals scatter plots

indicated homoscedasticity (Schützenmeister, Jensen, & Piepho, 2012). Further analysis of

residual independence was evaluated with a Durbin-Watson test with a statistic of 2.018

indicated the residual statistics were well within the conservative assessment Field (2013) states

values between 1 and 3 with a value of 2 ultimately representing uncorrelated residuals. Lastly,

the evaluation of residual statistics for abnormal points to identify outliers and potential,

influential points through conducting a Cook's D analysis, where one case presented studentized

variables of concern, figure 8 visually indicates the outlying case with a Cook's D value of .057,

where values greater than one present what Cook and Weisberg (1982) consider influential cases.

After reviewing regression analysis with the outlying case id 253125 and without the case id, the

resulting correlation impact changed + .007, which indicated the case did not have a significant

influence on the overall regression analysis.
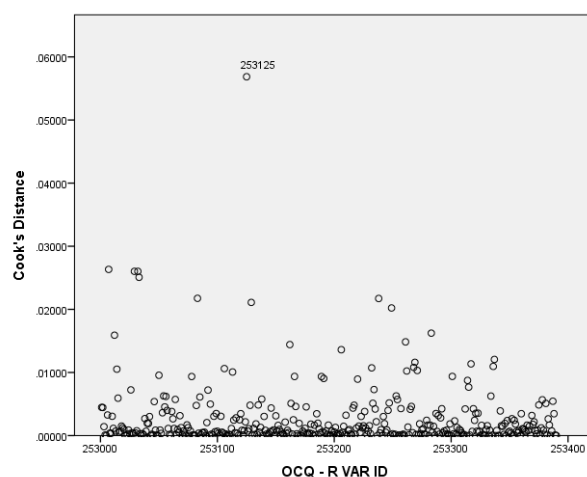
Figure 8. Cook's D analysis of dependent variable OCQ – R value of .057 < 1

Due to the mixed sentiment on normality determinants, especially Likert scaled data and while approximate normality has been established (Mishra et al., 2019; Norman 2010). To ensure appropriate correlation regression testing of outcomes, the correlation coefficients for both Pearson and Spearman's rho indicate a significant relationship at the .01 level 2-tailed. In order to validate correlation means and further investigate any variances based upon the Norman (2010) findings. Table 18 shows the resulting correlations indicate a significant positive construct correlation where further analysis observing the dependent variable for each role (management and non-management) reflected a stronger correlation of each participant's transformational leadership and readiness for change within the organization. Additionally, the mean difference between the two tests was within .004 (OQC-R), .029 (OCQ – R Mgt), and .010 (OCQ – R Non-Mgt), indicating either test returns a strong correlation (Norman, 2010).

Table 18

Correlation Coefficients OCQ – R and TL

	Pearson Correlation	Spearman's rho
	TL	
OCQ – R	.704	.708
OCQ – R Mgt	.674	.645
OCQ – R Non Mgt	.690	.680

Note. All outcomes statistically significant at $p < .05$

Due to the correlations indicate a linear relationship that exceeds a moderate measure of $\pm$ .5 and trend toward a strong correlation (Norman). To further measure the association among the dependent and independent ordinal variables due to the usage of tied rank instrumentation with Likert scales, Goodman and Kruskal's gamma rank correlation measure indicated a gamma coefficient value of .521 reflecting evidence of a strong association, where a gamma value of + 1 present either a perfect positive (+1) or negative (-1) relationship among the variables and 0 indicating no association (De Sá, 2007).

Table 19 contains the resulting ANOVA regression analysis for predicting transformational leadership model and positive relationship to increased levels of employee readiness, indicates an overall R^2 of .496 and adjusted R^2 of .495 indicating that transformational leadership statistically influenced 49% of participants organizational readiness for change variability. The predictive regression model was significant ($p < .0001$) for predicting higher levels of transformational leadership behaviors exhibited by managers and relationship to employee readiness. Consequently, the null hypothesis was rejected, and the alternative hypothesis was accepted, indicating that there is the significance of a relationship predicting transformational leadership and higher levels of employee readiness for change during Agile and DevOps initiatives.

Table 19

OCQ – R Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficient		
		B	Std. Error	βeta	t	Sig.
1	Constant (OCQ – R)	.778	.106		7.362	.000*
	TL	.754	.039	.704	19.543	.000*
2	Constant (OCQ – R MGT)	.948	.203		4.662	.000*
	TL	.713	.069	.674	10.316	.000*
3	Constant (OCQ – R Non MGT)	.769	.129		5.969	.001*
	TL	.748	.049	.690	15.294	.000*

Note. * significance $p < .0005$. Constant TL are significant. Dependent variable: OCQ – R.
Model sig. $p < .001$. [M1] F(1,388) = 381.948 , adj. R^2 = .495. [M2] F(1,128) = 106.427 , adj. R^2 = .450.
[M3] F(1,258) = 233.902 , adj. R^2 = .473.

Additional investigation to identify through estimation the component variables that had a significant overall influence on the regression model, factor analysis employing both maximum likelihood as well as principal component methods with orthogonal varimax rotation in order to inspect reliability and simplify uncommon correlations. (Osborne, Costello, & Kellow, 2008). The researcher found benefit in conducting both reduction methods in order to leverage the common aspects of dimensional reduction, however often due to confusion, each examines the

component variables in different manners (Joliffe & Morgan, 1992). Where the significance of

relationship and common variances is the key importance of factor analysis identifying latent

variables where component analysis aid in total variances through reduction to principal

elements (Thompson, 2004). Due to mixed sentiment on the overall reliability of the maximum

likelihood method when factor extractions containing Likert scales along with potential

normality challenges which could indicate evidence of bias observing the effects of maximum

likelihood over principle component analysis extractions (Rossoni, Engelbert, & Bellegard,

2016; Curran, West, & Finch, 1996).

In order to ensure proper usage of factor analysis both validation of Kaiser-Meyer-Olkin

(KMO) and Bartlett test for sphericity comparing the correlation matrix, outcomes for H1

resulted in a .909 KMO, where a result over .900 is considered marvelous, and Bartlett statistic

of .000 ($p < .0005$) both indicating the H1 model sample adequacy for factor analysis (Dziuban

& Shirkey, 1974; Kaiser, 1974). Table 20 provides both the factor and component matrices with

a scree plot indicate the optimal rotation and coefficient communalities among components

before and after. Favorability review of the correlation coefficients established at .30 for factor

loadings based upon Hair et al. (2006) with a sample size being greater than 350. Additionally

observing frequency distributions based upon the recommended breakpoints of fair > .45, good

> .55, very good > .63, and excellent > .71 (Comrey & Lee, 1992; Tabachnick et al., 2007).

Table 20

Factor and Component Analysis for H1 model.

	Factor Transformation Matrix					Component Transformation Matrix				
	1	2	3	4	5	1	2	3	4	5
1	.365	.280	**.638**	.169	**.594**	**.641**	.542	.356	.370	.179
2	.049	.025	.120	**.895**	-.426	.013	-.140	-.211	-.082	**.964**
3	.059	.045	**.651**	-.398	-.642	-.691	.178	**.631**	.236	.193
4	**.677**	**.567**	-.394	-.109	-.230	.171	.055	.480	-.858	.038
5	**.634**	-.773	-.016	-.013	-.004	.287	-.807	.447	.256	-.001

Note matrix values >.55 Bold and items >.63 highlighted

Total Variance Explained

Factor	Initial Eigenvalues	% of Variance	Cumulative %
1	10.116	34.884	34.884
2	1.885	6.501	41.385
3	1.368	4.717	46.101
4	1.159	3.997	50.099
5	1.112	3.835	53.934

Extraction: Maximum Likelihood | Principal Component Analysis.
Rotation: Varimax with Kaiser Normalization.

Scree Plot
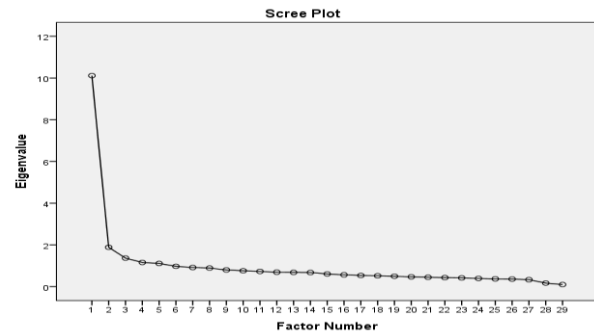
A total variance analysis provided five factors with eigenvalues > 1 with the five components explaining a cumulative total variance of 53.9%; with the factor, variances ordered alignment individually indicating 34.9, 6.5, 4.7, 3.99, 3.8 percent of the variance total for the dependent (OCQ-R) and independent variables (TL) outcomes. Overall the resulting standard component and varimax rotated matrices conducted using factor and component analysis types provided major component loadings and meaningful insights specifically for application to address the overarching business problem for this research study (McCall, 2018).

Finally, a post hoc univariant linear regression model testing the construct effects with table 21 showing results for both management and non-management roles accounting for dependent coefficient indicates an effective R^2 of .598 and adjusted R^2 of .541 indicating the transformational leadership statistical influence effect increased +5% of participants organizational readiness for change variability with significance (O'Dwyer & Bernauer, 2013).

Table 21

Tests of Between-Subjects Effects Analysis – OCQ - R

Model	Source	Type I Sum of Squares	df	Mean Sq	*F*	*R²*	*Adj. R²*	*p Sig.*
1	(OCQ – R) | TL	78.216	48	1.630	10.546	.598	.541	.000*
2	(OCQ – R MGT) | TL	29.235	39	.750	4.340	.653	.502	.000*
3	(OCQ – R Non MGT) | TL	47.970	47	1.021	7.203	.615	.530	.000*

Note. * significance $p < .0005$. Constant TL are significant. Dependent variable: OCQ – R.
Model sig. $p < .001$. [M1] F(1,341) = 10.546 , adj. R^2 = .541. [M2] F(1,130) = 4.340 , adj. R^2 = .502.
[M3] F(1,260) = 7.203 , adj. R^2 = .530.

Hypotheses 2. Hypotheses Ho2 and Ha2 examined the extent of a relationship existing between transformational leadership behaviors of managers and employee organizational citizenship behavior during enterprise Agile and DevOps initiatives. Through utilizing the OCB instrument (Podsakoff et al., 1990) dependent variable and MLQ Form 5x Short transformational leadership (Avolio, Bass, & Jung, 1999) independent variable. The following hypotheses were evaluated:

Ho2: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee OCB during Agile and DevOps initiatives.

Ha2: Higher levels of transformational leadership behaviors exhibited by managers are related to higher levels of employee OCB during Agile and DevOps initiatives.

Analysis. In order to analyze and test the null hypothesis, Ho2. First, linearity was confirmed through visually inspecting the QQ plots (Figure 9) and histograms (Figure 10) of the construct variables for observed versus expected outcome deviations (Das & Resnick, 2008). The cumulative probability for the QQ plots with quartile constructs indicated normality for both OCB and TL as well as visual observation of the histogram, indicate the split variable frequency between management (N = 130) and non-management (N = 260) roles. The visual inspections reflecting an assumption of normality in observing the cumulative quartiles versus individual scores. Skewness for OCB and TL were -.072 and -.164 with kurtosis -.765 and -.667, respectively. Basing the assumption of normality on Mishra et al. (2019), and Kim (2013), since the sample size is > 300 and the absolute values of both skewness < 2 and kurtosis < 4 approximate normality has been determined. The inspection of Kolmogorov-Smirnov test variables indicated OCB having a significance .014 and TL .003 (p > .05), since the KS test resulted in violation of the assumption of normality the fact that the sample size (N = 390)

considered large by researchers Ghasemi and Zahediasl (2012) the "central limit" theory

indicates the sample distribution to be considered normal.
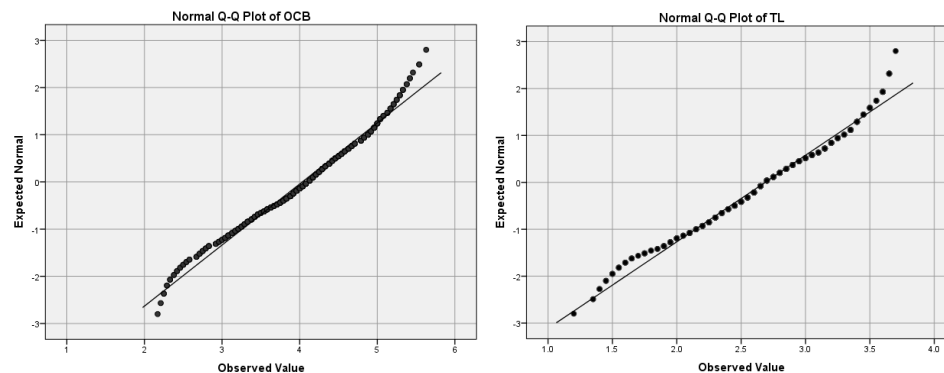
Figure 9. Normal QQ Plot for Organizational citizenship behavior (OCB) and MLQ- Form 5x Short transformational leadership (TL).
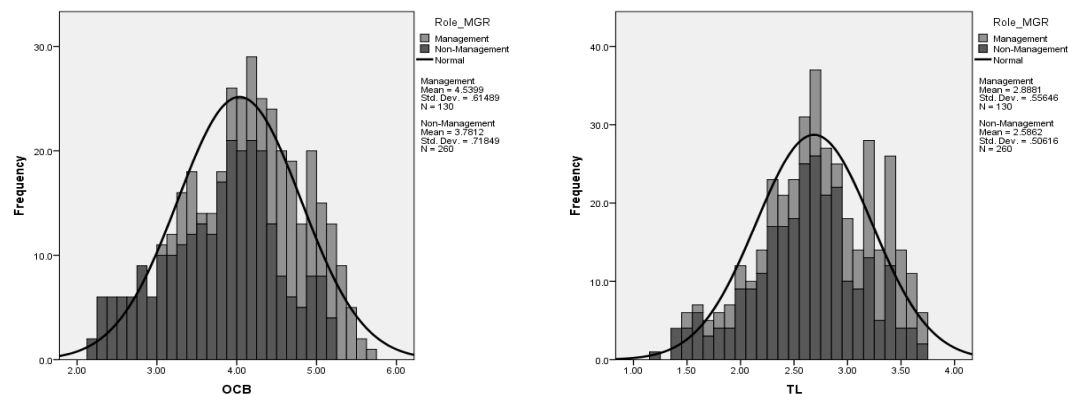
Figure 10. Histogram for Organizational citizenship behavior (OCB) and MLQ- Form 5x Short transformational leadership (TL).

In order to further investigate the Ho2 null hypothesis, regression testing of the following

constructs OCB (dependent variable) and TL (independent variable), inferential statistics were

used for correlational analysis and hypothesis test evaluation were based upon a t statistic ($t > .05$

no rejection and $t \leq .05$ reject) and a .95 confidence level leaving Type I error with a .05

possibility of mistaken null hypothesis rejection where it is true (Field, 2013).

Confirmation of the existence of relationship linearity between the variables affirmed through visually inspecting the unstandardized value predictions versus studentized residuals scatter plots indicated homoscedasticity (Schützenmeister, Jensen, & Piepho, 2012). Analysis for residual independence evaluation was conducted with a Durbin-Watson test indicating a statistic of 1.881, reflecting that residual statistics were between 1 and 3 with a value of 2 representing uncorrelated residuals (Field, 2013). Finally, the evaluation of residual statistics for abnormal points to identify outliers and potential, influential points with a Cook's D analysis, the studentized variables presented one minor outlying case (ID 253125), which visually indicated some effect (figure 11) with a coefficient value of 0.160. However, the resulting case did not have a significant impact on the linear modeling since analysis without the case resulted in a minimal impact of + .008; the case remained given a minor influence on the overall regression.
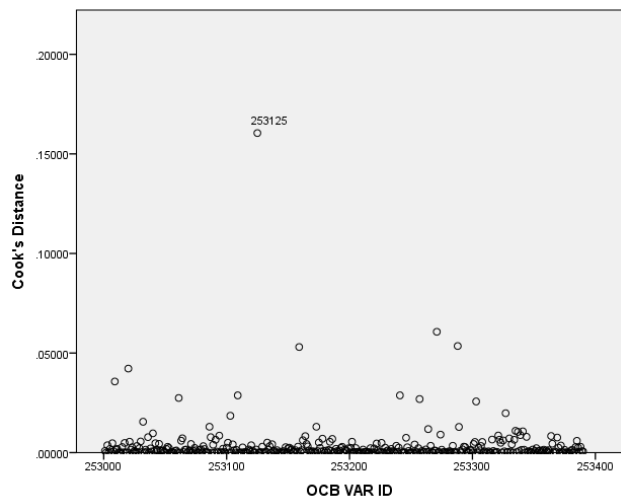
Figure 11. Cook's D analysis of dependent variable OCB value of .160 < 1

Based on the previous findings regarding affirming approximate normality (Mishra et al., 2019; Norman 2010), both Pearson and Spearman's rho indicate a significant relationship at the .01 level 2-tailed. To validate correlation means and further investigate any variances, table 22 shows resulting correlations significance for the dependent variable, and each role (management

and non-management) reflecting a strong correlation of each participant's transformational

leadership and organizational citizenship behaviors. The resulting analysis of the mean

difference for the two tests was within .009 (OCB), .001 (OCB Mgt), and .024 (OCB Non-Mgt),

indicating a strong correlation with both Pearson and Spearman rho (Norman, 2010).

Table 22

Correlation Coefficients OCB and TL

	Pearson Correlation	Spearman's rho
	TL	
OCB	.678	.687
OCB Mgt	.543	.542
OCB Non Mgt	.708	.684

Note. All outcomes statistically significant

The correlations indicate a linear relationship that exceeds a moderate measure of $\pm$ .5,

indicating moderate with those $\pm$ .7 having strong correlations (Norman, 2010). Necessary

association measurement among the dependent and independent ordinal variables, through

analysis of Goodman and Kruskal's gamma coefficient indicated a gamma value of .587 (N =

390), which is a reflection of a strong association (De Sá, 2007).

Table 23

OCB Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficient		
		B	Std. Error	βeta	*t*	Sig.
1	Constant (OCB)	1.434	.146		9.835	.000*
	TL	.968	.053	.678	18.188	.000*
2	Constant (OCB MGT)	2.807	.241		11.638	.000*
	TL	.600	.082	.543	7.316	.000*
3	Constant (OCB Non MGT)	1.182	.164		7.188	.000*
	TL	1.005	.062	.708	16.103	.000*

Note. * significance $p < .0005$. Constant TL are significant. Dependent variable: OCB.
Model sig. $p < .001$. [M1] $F(1,388) = 330.798$, adj. $R^2 = .459$. [M2] $F(1,128) = 53.531$, adj. $R^2 = .289$. [M3] $F(1,258) = 259.308$, adj. $R^2 = .499$.

The outcome regression analysis for predicting transformational leadership model and

positive relationship to increased levels of employee organizational citizenship behavior during

enterprise Agile and DevOps initiatives, table 23 indicates an overall R^2 of .460 and adjusted R^2 of .459 indicating that transformational leadership statistically influenced 46% of participants organizational citizenship behavior variability. The regression model indicated significance ($p <$ .0001) for predicting higher levels of transformational leadership behaviors exhibited by managers and relationship to employee organizational citizenship behavior. Ultimately rejecting the null hypothesis and accepting the alternative hypothesis where there is the significance of predicting a relationship between transformational leadership and higher levels of organizational citizenship behavior during Agile and DevOps initiatives.

Supplementary investigation was also conducted to identify component variables having significant overall influence on the regression model, a maximum likelihood factor analysis with varimax rotation analysis confirmed with scree plot visual inspection where Heeler, Whipple, and Hustad, (1977), indicate usage for maximum likelihood factor analysis as a "useful technique" for behavior attitude data analysis. Through conducting dimensional analysis on both variable model construct with all OCB items capturing the significance of relationships and common variances through factor analysis and component analysis aiding with identification of total variances through the reduction of component elements (Thompson, 2004).

Validation of Kaiser-Meyer-Olkin (KMO) and Bartlett test for sphericity was conducted in order to compare the correlation matrix, outcomes for H2 resulting with a KMO of .948, and Bartlett statistic of .000 (p < .0005) both signifying the H2 model samples adequacy for factor analysis (Dziuban & Shirkey, 1974; Kaiser, 1974). The factor and component matrix in Table 24 provides the component communalities and before and after model rotation elements. Overall favorability correlation coefficients > .30 were established for factor loadings due to the sample size being greater than 350 (Hair et al., 2006). Also, frequency distributions based upon the

recommended breakpoints of fair > .45, good > .55, very good > .63, and excellent > .71

(Comrey & Lee, 1992; Tabachnick, Fidell, & Ullman, 2007).

Table 24

Factor and Component Analysis for H2 model.

	Factor Transformation Matrix					Component Transformation Matrix				
	1	2	3	4	5	1	2	3	4	5
1	.856	.355	.310	.120	.176	.641	.542	.356	.370	.179
2	-.288	.721	.236	.141	-.567	.013	-.140	-.211	-.082	.964
3	-.299	-.064	.365	.775	.415	-.691	.178	.631	.236	.193
4	-.264	.557	-.169	-.344	.688	.171	.055	.480	-.858	.038
5	-.160	-.196	.829	-.496	.053	.287	-.807	.447	.256	-.001

Note matrix values >.55 Bold and items >.63 highlighted

Total Variance Explained

Factor	Initial Eigenvalues	% of Variance	Cumulative %
1	7.928	33.031	33.031
2	1.353	5.635	38.667
3	1.184	4.935	43.602
4	1.073	4.469	48.071

Extraction: Maximum Likelihood | Principal Component Analysis.
Rotation: Varimax with Kaiser Normalization.
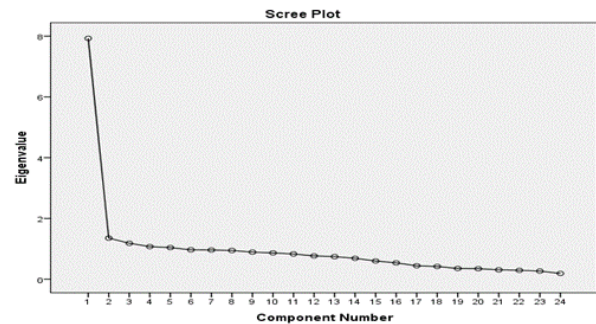
The OCB total variance evaluation indicated factors with eigenvalues > 1 for four

components explaining a cumulative total variance of 48.1%, aligning as follows 33.0%, 5.63%,

4.94%, 4.47% factor variance totals for the model variables. Overall the resulting standard

component and varimax rotated transformation matrix identify a deeper understanding of the

model loadings providing relevant context, in order to address this research study's primary

business problem (McCall, 2018).

To conclude the H2 model analysis, a post hoc univariant linear regression model

analyzing the overall construct effects indicating results in table 25 for the roles of non-

management and management providing an effect analysis of the dependent variable with an

effective R^2 of .598 and adjusted R^2 of .541 indicating the transformational leadership statistical

influence effect increased +5% of participants organizational readiness for change variability

with significance (O'Dwyer & Bernauer, 2013).

Table 25

Tests of Between-Subjects Effects Analysis - OCB

Model	Source	Type I Sum of Squares	df	Mean Sq	F	R^2	Adj. R^2	p Sig.
1	(OCB) | TL	126.619	48	2.638	8.506	.545	.481	.000*
2	(OCB MGT) | TL	36.052	39	.924	6.540	.739	.626	.000*
3	(OCB Non MGT) | TL	84.012	47	1.787	7.626	.628	.546	.000*

Note. * significance $p < .0005$. Constant TL are significant. Dependent variable: OCB.
Model sig. $p < .001$. [M1] $F(1,48) = 8.506$, adj. $R^2 = .481$. [M2] $F(1,39) = 6.540$, adj. $R^2 = .626$.
[M3] $F(1,47) = 7.626$, adj. $R^2 = .546$.

Hypotheses relationship to research questions. The hypotheses for the correlational,

quantitative study were established from two research questions. To associate the extent that a

relationship exists between transformational leadership behaviors of managers and employee

readiness for change during enterprise Agile and DevOps initiatives, aligning with the following

hypothesis to analyze and respond to the research question.

Ho1: Higher levels of transformational leadership behaviors exhibited by managers are

not related to higher levels of employee readiness for change during Agile and DevOps

initiatives.

Ha1: Higher levels of transformational leadership behaviors exhibited by managers are

related to higher levels of employee readiness for change during Agile and DevOps

initiatives.

Resulting in rejection of the Ho1, the null hypothesis given the statistically significant (p

< .0001) correlational relationship of increased transformational leadership behaviors and

employee readiness for change during Agile and DevOps change undertakings. The positive

effect of readiness for change, indicating that transformational leadership statistically influenced

49% of participant's organizational readiness for change variability, with adjusted R^2 of .495

effect. The correlation impact of organizational change readiness and transformational leadership overall presented a mean correlation of .706 with a statistical significance of $p < .01$, where the mean correlational impact between the roles of management .685 and non-management .657 signifying a stronger positive correlation increase of .025 for participants in management roles (O'Dwyer & Bernauer, 2013). Where the model components focus on readiness benefits to employees demonstrating the positive relationship and variance among roles and correlational impacts of the change efforts implementation demonstrating transformational leadership characteristics (Steyn & Cilliers, 2016), additionally the regression outcomes reflecting that the overall nine organizational change readiness items aligned with the following three factors, intentional readiness for change, cognitive readiness for change, and emotional readiness for change all have significant influence in alignment with the twenty indicators for transformational leadership where construct items include, idealized influence attributed and behavior, inspirational motivation, intellectual stimulation, and individualized consideration, where the essential component of change readiness confirming what Farahnak et al. (2019) expose as drivers of organizational readiness approaches and how organizations can foster positive transformational leadership behaviors within working teams.

The secondary research question examined the extent of a correlational relationship existing between transformational leadership behaviors of managers and employee organizational citizenship behavior during enterprise Agile and DevOps initiatives, using the following hypothesis to answer the research question.

Ho2: Higher levels of transformational leadership behaviors exhibited by managers are not related to higher levels of employee organizational citizenship behavior during Agile and DevOps initiatives.

Ha2: Higher levels of transformational leadership behaviors exhibited by managers are

related to higher levels of employee organizational citizenship behavior during Agile and

DevOps initiatives.

The null hypothesis (Ho2) was rejected with the alternative (Ha2) being accepted due to the

positively strengthened correlation of transformational leadership and employee organizational

citizenship behaviors with significant statistical outcomes ($p < .001$) during Agile and DevOps

change initiatives. The strong positive effect of organizational citizenship behavior signifying

that transformational leadership with an adjusted $R2$ of .459, where the transformational

leadership style statistically affected 46% of participant's organizational citizenship variability.

Bringing to light confirmation of the research, Avey et al. (2008) conducted on behavior analysis

with the sense of positive change outcomes and associating those outcomes to supplementary

employee behaviors within a respective organization. Overall the relationship correlation of

organizational citizenship behaviors and transformational leadership behaviors represents a

correlation mean of .683 and $p < .01$ significance. Where management roles had a $+ 0.138$

correlation variance with a higher positive correlation mean of .696 reflecting the increased

relationship among the variable construct, while non-management roles at .543 had an overall

decrease in the mean correlation between transformational leadership and organizational

citizenship behaviors. The H2 model components focused on organizational citizenship

behaviors and the factors presented by Farahnak et al. (2019), representing the benefit of

positivity reflected by organizational leaders and conveying those in practice reflecting

confidence and success. The regression model additional reflected predictive outcomes for all

nineteen organizational citizenship behavior instrument items aligning the central factors of

altruism, civic virtue, conscientiousness, courtesy, and sportsmanship, with each having a

significant influence in alignment. Also, the transformational leadership construct items (IIA, IIB, IIC, IIM, and IIS) adequately represented the findings to address the research question forming a base model associating the overall MLQ Form 5x Short transformational leadership and overall organizational citizenship behavior score range (Bass & Avolio 2004, 1995).

Summary of the findings. The primary concentration of the correlational study examining hypotheses associated with research questions addressing leadership style and the underlying business problem relating to the high probability of failure organizations face when engaging in enterprise Agile and DevOps transformational change initiatives. Where an examination of the general problem seeking to understand the association of transformational leadership styles and impacts in adopting agile methodologies across the organization within regional financial services companies with a presence in the South Eastern United States. The resulting survey instrumentation and participant data aggregation through conducting statistical analysis for reliability and hypothesis validity regressing each dependent variable construct in conjunction with the constant independent transformational leadership variable (McCall, 2018).

Detailed findings explained the rationale for hypotheses testing and outcome analysis supported through SPSS statistical validation and overall test selection (IBM, 2016). With the overall objective ensuring to associate the hypotheses test results along with the supporting research questions and alignment with the current body of knowledge. The hypotheses analysis and modeling exclusively isolated role levels presenting statistical rationale indicating that transformational leadership statistically influenced participant organizational readiness for change and organizational citizenship behaviors in a statistically significant manner (O'Dwyer & Bernauer, 2013; McCall, 2018). The resulting hypotheses analysis indicated the statistical relationship between the dependent variable constructs and transformational leadership, with

outcomes accepting the alternative hypothesis due to statistically significant outcomes supporting

the rejection of each null hypothesis.

Given the post hoc univariant linear regression models analyzing the overall hypotheses

affect constructs. Further investigation to identify the extent to which transformational leadership

predicts the dependent construct level for both organizational change readiness and

organizational citizenship behavior. Analysis of the univariant variance analysis matrix

indicating the discriminate estimates in table 26 provides a measure of transformational

leadership scores (0 – 4) and the bounded prediction likelihood level of each dependent variable.

Table 26

Discriminate estimate matrix results predicting OCQ-R and OCB for TL

	Predicted	Std. Err	95% Confidence Interval		Predicted	Std. Err	95% Confidence Interval	
	OCQ - R Score [1 -5]		Lower Bound	Upper Bound	OCB Score [1 - 7]		Lower Bound	Upper Bound
TL Score								
4 = Frequently, if Not Always	3.620	.254	3.136	4.105	5.339	.360	4.652	6.026
3 = Fairly Often	3.495	.132	3.234	3.756	4.841	.188	4.471	5.211
2 = Sometimes	2.713	.126	2.465	2.960	3.956	.179	3.605	4.307
1 = Once in A While	2.375	.234	1.916	2.834	3.578	.331	2.927	4.229
0 = Not at All	2.155	.281	1.603	2.707	3.270	.398	2.488	4.052

Note. Estimate significance p <.0005

With the predictive ranges indicating a .95 confidence interval for the overall relative

span of estimated score outcomes. The predictability scores for organization change readiness

(OCQ – R scale 1 to 5) yielded a range of 2.502 with a mean bound variance of .80, where the

organizational citizenship behavior (OCB scale 1 to 7) produced a more extensive predictability

range of 3.538 and 1.14 mean bound variance (O'Dwyer & Bernauer, 2013). The overall range of

likelihood for transformational leadership indicated a tighter score range for readiness factors

with a minimum variance of .495 and maximum variance of 1.104 where organizational

citizenship behavior score estimates span increased with a minimum of .702 and maximum of

1.564 both dependent variable variances impacted the transformational leadership scores with the larger spans aligning at the lowest TL score range and the minimum estimate variance aligning at the mid-point for TL scores, which indicates the predicted score estimate distributions align with overall higher levels of each dependent construct however comparatively OCQ-R outcomes indicated a narrow span with lower score estimates versus OCB estimates which produced outcomes moderately broader and tangibly elevated (McCall. 2018). On the whole the present study findings present the case that while there is statistical association of the extent to which a relationship exists between transformational leadership behaviors of managers and employee readiness for change and organizational citizenship behavior during enterprise Agile and DevOps initiatives, the broader predictive indicators present evidence that organizational citizenship behavior trends are influenced slightly more by transformational leadership than aspects of change readiness.

Overall it the rejection of the null hypothesis was realistic given the extent of research providing evidence of constructive outcomes promoting beneficial change (Bourne 2016; Mackay, 2010; Sandhya & Kumar 2011; Avolio, Bass, & Jung, 1999). The present research indicates measures of employee organizational citizenship behavior and change readiness positively correlating with increased levels of transformational leadership. Where the general level of influence correlations of each construct indicates a meaningful association with change readiness having a stronger relationship .706 mean correlation, compared to organizational citizenship behaviors at .683 mean correlation. Further analysis of the correlations at a deeper level indicates distinct levels of influence between managerial and non-managerial roles. Overall, while the outcomes where statistically significant confirming acceptance of the null hypothesis, the mean correlation for change readiness at the managerial level was lower by -.047

in comparison to -.021 for self-reported non-managerial roles. Additionally, organizational citizenship behaviors provided insight into the overall correlational relationship to transformational leadership, indicating where participants self-identified as having non-managerial roles had an increase in overall correlation outcomes by + .013, while management roles indicated a slightly reduced correlation of -.140 from the overarching mean score. The outcomes provide more in-depth insight into the weight of the relationship and could be due to several factors that will be addressed within the application of practice section.

Applications to Professional Practice

The context of this study provided the opportunity for better understanding of the relationship transformational leadership behaviors exhibited by managers, and employees' readiness for change and enterprise organizational citizenship behavior during Agile and DevOps initiatives, the specific correlational research gathered material evidence substantiating the association of transformational leadership styles impacting the adoption of Agile methodologies across the enterprise. With the expanding significance of cross-functional work-groups in organizations, Porter, Bigley, and Steers (2003) expressing the importance of leadership style consideration and research committing to determining useful workgroup results and motivation. The resulting study provides evidence to address the business need in aligning the leadership style that best provides insight to Agile teams and the opportunity to scale methodology adoption across the enterprise. Primarily due to research findings indicating a reduction in performance outcomes due to varying leadership styles and clear guidance (Kakar, 2017). Leaving the opportunity to associate further research such as this present study to address how the transformational leadership style influences the dynamics of agile methodology adoption (Kalenda, Hyna, & Rossi, 2018; Montgomery, 2018). The study found correlational indicators

that provide organizational leaders with style approaches and methods to influence the adoption of Agile and DevOps methodologies across the enterprise.

Change readiness applications. The implications of the correlational findings identify beneficial context from the two dependent variable constructs and specific elements having a significant influence on the correlation to increased transformational leadership behaviors. In general, from a change readiness perspective, each of the organizational change questionnaire readiness components had a significant influential breakpoint greater than .63, which Tabachnick et al. (2007) indicate as being very good to excellent with all nine scale items having meaningful influence. As confirmation a correlation analysis conducted to measure transactional leadership behaviors and their relationship to change readiness with figure 12, providing context and insight indicating a moderate mean correlation of -.378 (p < .01). Further investigation of the three OCQ readiness components for change intentional, cognitive and emotional the area presenting the highest correlation influence was in the component of intentional readiness while each of the remaining components having one significant influential variable specifically around viewing change in a positive manner, and the contributing willingness or devotion to change. The results from the present study also indicated a slightly higher correlation in readiness among participants self-identifying as having non-managerial roles while not overly significant at +.026 the difference is an indicator of autonomy and could lead to the presumption of change adoption, along with cognitive acceptance of communication from those in managerial roles (Von Treuer, et al., 2018; Haque, TitiAmayah, & Liu, 2016).Where the slightly lower managerial role in change readiness correlation elements are more closely aligned to transformational leadership behaviors in comparison to those in non-managerial roles, indicating the challenge of leaders having to determine needed and potentially unknown change drivers (Rath, 2016; Hickman,

2009) leaving minimal probability for increase due to already elevated transformational

leadership levels (Jandaghi, Matin, & Farjami, 2009).
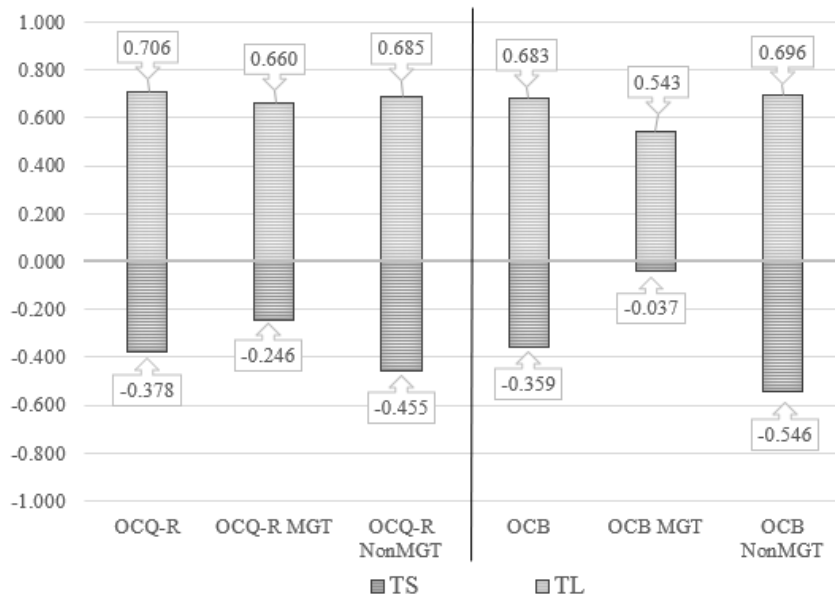
Figure 12. Correlation variances for dependent (OCQ-R & OCB) and independent (TL & TS) variables.

Organizational citizenship behavior applications. Results for organizational

citizenship behaviors provide aid with the dynamics of employee engagement (Kataria, Garg, &

Rastogi, 2012), where considerations of participant roles within the present study indicated a

variance of $\pm$.154 in organizational citizenship behavior correlation significance between

managerial and non-managerial self-reported roles. The implications of this finding would

support the notion of management being established in managerial roles and such activities are

typical role aspects where elements of OCB have tendency to resonate with those in non-

managerial roles indicating career achievement and advancement opportunities with higher

levels of organizational citizenship behaviors (Kataria et al., 2012; Ahmed, Rasheed, &

Jehanzeb, 2012). Additionally, the alignment of elevated transformational leadership behaviors

and the relationship to organizational citizenship can be associated with a higher propensity for

servant leadership (Ja'afaru Bambale, 2014). Where the additional insight of those in non-managerial roles having increased correlations of organizational citizenship behaviors indicates the fundamental nature of Agile cross-functional teams being self-organized with leaders emerging from within the team versus through traditional hierarchical management assignments (Deschamps, Rinfret, Lagacé, & Privé, 2016). Figure 12 indicates the correlation variances for both transformational and transactional leadership with a key finding in correlational relationship of organizational citizenship behaviors and transactional leadership behaviors, where overall there is a slight impact however the findings within non-managerial levels indicates an opportunity for further insight given the significant correlation and potential indicators of transactional leadership negatively influencing how employees engage to perform above and beyond (Deschamps et al., 2016).

Professional certification impacts. In the effort to identify further relevance and application to business, a broader analysis of study participants holding professional certifications related to Agile and DevOps found beneficial evidence as well as areas for broader research. Specifically observing the implications of study participants holding certification and frequencies between managerial and non-managerial roles for each study variable, with the distributions capturing influential results (O'Dwyer & Bernauer, 2013). For the independent variable transformational leadership, figure 13 provides evidence of higher transformational leadership being observed within the group of managerial participants where transformational leadership behaviors indicate moderate trends within non-managerial roles. The significant finding was the dispersed distribution of transformational leadership behaviors among those managers self-identifying as not holding a professional certification.

Figure 13. Transformational leadership distribution for roles and certifications.

Further investigation of both dependent variables also provided beneficial evidence indicating certification trends and the impacts of change readiness as well as organizational citizenship behavior. Figure 14 provides a visual indication of even frequency distributions where change readiness (OCQ – R) had significance among participants self-indicating to holding one or more professional certifications related to Agile and DevOps.
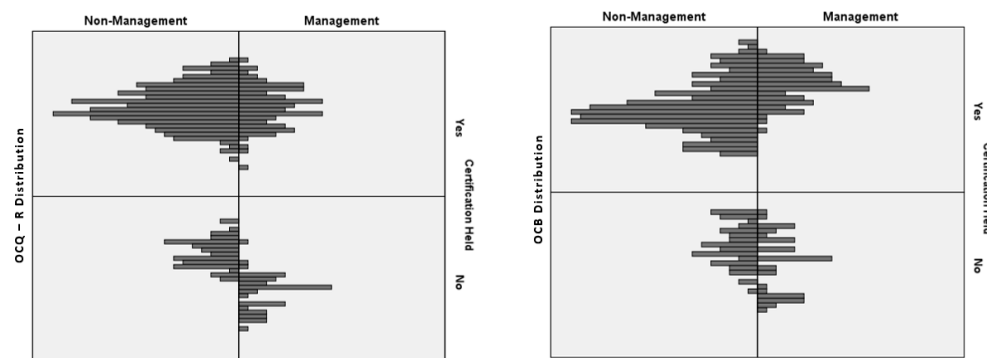
Figure 14. OCQ-R & OCB distribution for roles and certifications.

For participants without certifications the frequency distributions indicate two different situations, while those in management roles without certifications had significantly lower OCQ – R scores which could indicate a point of failure given the relatively balanced distribution of management reflecting change readiness when holding an Agile or DevOps certification versus those in management roles without certifications trending with lower readiness scores. The lower score distributions for management identify the potential inability to affect change during Agile

and DevOps transformation initiatives due to lack of knowledge or prior experience (Nerur, Mahapatra, & Mangalaraj, 2005). On the other hand for those in non-managerial roles without certifications the change readiness distribution reflects trends of higher change readiness, which could either signal events of "trial by fire" (Sutherland & Altman 2009) or indicate the willingness to learn and grow as well as signals of Agile methodology favoring engagement (Nerur et al., 2005). The distribution indicators for organizational citizenship behaviors reflected a trend of active engagement in behaviors increasing organizational citizenship among both managerial and non-managerial roles where participants held professional Agile and DevOps certifications. While the frequency for managerial roles previously noted as being more tightly distributed. The beneficial findings indicate a slight trend similar to readiness for change among those participants in non-managerial roles where organizational citizenship behaviors tendencies reflect an increase worth potential future investigation.

Overall additional research could be done to identify the impacts of Agile and DevOps training and certification with the capacity for change readiness. Given that this study did not concentrate on the relevance of certifications held, the frequency distributions did aid with generalities (McCall, 2018) however broader investigation and further studies concentrating on their impacts among both organizational change and leadership influence during Agile and DevOps transformations would benefit the overall body of knowledge (Rico, 2010).

Biblical implications. The significance of leadership in the marketplace and business today is essential to successful change from strategy to execution, leaders are crucial guides aiding in the formation of the very rails in which business outcomes are realized. It is through leadership that organizations find unity within change and sustain the future operating environment regardless of the methodology being implemented (O'toole, 1996). Historical

evidence can be found with the Bible providing thousands of cases of change and influential

outcomes of leadership. In today's ever-changing and dynamic marketplace, the Bible has

relevant applications, where the Gospel shares the essential ingredient for transformational

leadership aligning with readiness for change and organizational citizenship behavior. The

endeavors of today's business leaders pursuing organizational transformation can look to the

church as Paul explains in 1Corinthians through the unity of one body aligned through Jesus

Christ and among the unity the church has many members just as the body each having an

essential part in the operation of the body as one. In Acts, Paul points out how the early church

flourished due to unity, "enjoying the favor of all the people" (2:47). The blessing of the early

church, as Paul explains, was the addition of members due to the perspective of outsiders, those

being "non-believers" observing the unity, fellowship, and being completed to take part.

However today with the church flourishing for over two thousand years, challenges do arise, and

failures arise where reports indicate the leading problem facing the church is unity disfunction.

In order to combat the challenges of unity breakdown Paul provides leadership instruction in

Ephesians, which bears a connection with transformational leadership behaviors. He calls for the

unity of leading a life " worthy of the calling – received" through living humbly, gentle, and

patient, and "accepting one another in love, making every effort to keep the unity of the Spirit

through the bond of peace" (4:1-3, NIV).

     From a secular perspective a parallel can be drawn to organizational leaders seeking to

transform and adopt Agile methodologies in efforts to incorporate unity, where researchers have

found significant leadership style challenges in Agile teams' ability to associate expectation

while adopting agile methodologies across the organization (Ferreira et al., 2012; Parker et al.,

2015; Dikert et al., 2016). Those challenges often leading to failure of agile initiatives stemming

from several factors, including dysfunction, several studies indicate uncertain leadership styles while adopting Agile methodologies where researchers have found unsustainable business impacts influencing Agile outcomes (Nkukwana & Terblanche, 2017; Kalenda et al., 2018). Given the fact that organizations face a high probability of failure when engaging in enterprise Agile and DevOps transformational change initiatives. (Denning, 2018a, 2018b, 2018c, 2018d, 2017; Jorgensen, 2018; Mayner, 2017; Decker et al., 2012). Failure, however, is not always a sign of dysfunction or disorder, indicating that an initiative has completely failed, especially considering the open acceptance within Agile to embrace failing fast (Alliance, 2001). Sometimes it is the failure itself providing a sign that the organization and transformation initiative is attempting to operate at a level that the organization and leadership are not mature enough to handle. Farahnak, Ehrhart, Torres, and Aarons (2019) share a perspective where employees have tendencies to reflect "positive attitudes toward the change being implemented if they feel as though organizational leaders understand the potential challenges but have confidence that employees can overcome them and successfully implement the practice" (p.11).The benefit is that there is opportunity for redemption and growing out of failure, provided leadership does not give up and forges ahead learning from the situation.

Recommendations for Action

The research focus and findings of this study exploring the extent of a relationship existing between transformational leadership and factors of change readiness as well as organizational citizenship behaviors during Agile and DevOps enterprise initiatives, present central outcomes which align with opportunities for further action where organizations can focus attention and resources in order to successfully scale Agile and DevOps initiatives. With Agile fundamentally becoming mainstream in recent years, bringing pockets of success (Bustard,

2012), the focus becomes bringing the methodologies into the corporate culture and allow them to permeate throughout organizations and substantial enterprise value (Deloitte, 2019). However, research indicates that the opportunity for further influence and alignment across the enterprise still exists where strategy, resourcing, and structures are critical in supporting change. The findings that transformational leadership behaviors positively impact change readiness within both non-management and management levels is the vital behavior to leveraged as a fulcrum to impact Agile change, where the additional elements of linking strategy, resourcing, and organizational infrastructure provide the necessary means to sustain. Placing attention on management, transformational leadership behavior influencers, and core dependent variables aiding success in organizational change easing difficulties (Armenakis, Harris & Mossholder, 1993) and explicitly evaluating change readiness key measures. Where the capacity for leaders inspirational actions and ability to create guiding vision teams regardless of the environment changes as Coleman (2018) and Burns (2004) through aligning transformational leadership and change, with the dynamics of inspiring change which empower leaders and followers, mutually fulfilling fundamental needs, motivational focus, and innovation equating to value endurance.

      Value and change readiness. Given the significance for organizations to affect the focus on proper organizational alignment and employing supporting strategy, resourcing, and performance measures aligning to success factors as well as areas of improvement. The primary area of significance becomes leaders yielding to crucial areas of focus endorsing agile value in order to influence a tipping point achieving Agile methodology saturation throughout the organization (De Smet, Lurie, & St George, 2018; Kim & Mauborgne, 2003). With the present study finding a significant correlation between transformational leadership and the three change readiness factors with significant alignment with intentional readiness among participants having

management roles as well as all roles having significance with cognitive readiness for change. The findings connect with best practices for change development and execution being reliant upon key change processes in addition to competent leadership to offer employees critical change strategies. Where the organizations change efforts must interweave with change strategy and the overall guiding approach for the enterprise, influencing operation to execute enterprise strategy (Gamble et al., 2019). Berman and Dalzell-Payne (2018) consider how organizations can assemble a variety of change approaches, empathetic to the dynamic changing perspective of individual employees and workgroups. Considering the importance of engagement and transformational leaders being supporters of successful change (Santiago, 2018), with the importance of collaboration and central change purpose focusing where leaders leverage channels of consistent communication in order to facilitate change focus and evidence of change. Ultimately to achieve successful Agile change throughout the organization, the key becomes focusing on elevating genuine leaders who affiliate their leadership style in ways that transforms proactively among employees to cognitively envision the newly transformed state and profoundly believe in the new vision as well as the strategies that will achieve the transformational outcomes (Jones & Ricardo, 2013).

Strategy association. Research has indicated that transformational leadership styles are rooted within every organization, from strategy to personnel, feeding organizational culture. Where the capacity for leaders to create and sustain culture change has significant value impacts and influences from employees, customers, as well as the broader marketplace (Jones & Recardo, 2013). With the role of leadership having a prominent responsibility and focal point for organizational change (Kuipers et al., 2014). The call for leaders to mobilize change and shape a vision for change, the essential reflection of change management skillset where the successful

process of becoming change agents compels and motivates others (Kouzes & Posner, 2012; Van Knippenberg & Hogg, 2003). Opportunities for transformational leaders in roles as management and non-management functions within self- guided working teams to engage in both self-efficacy as well as collective-efficacy (Bandura, 1998), focusing on critical engagement indicators especially from a cross-functional collective perspective would be a beneficial investment to aid in gauging change outcomes and strategic alignment, fundamentally sharing ideas and attitudes of the collective group in order to execute and the required course of action, organizing in a manner required to produce desired levels of value (Salanova et al., 2003). Given the many approaches to leadership, the same can be found true for agile, where the organizational fit and capacity to fully embrace Agile and DevOps, often bringing elements of uncertainty and sometimes challenging dynamics with changes in realized value being incremental and transparent (Kim & Mauborgne, 2003).

Sustaining change drivers. Understanding of core transformational leadership traits foundationally driving employee actions is critical to sustaining change within an organization. The present study finds through organizational citizenship behaviors the recommendation of advocacy, endorsing the underlying change fundamentals, and utilizing the characteristics associating with the higher correlations with the level of transformational leadership behaviors. In consideration of transformational leadership skills and beliefs revealed by David and Matu (2013), they indicate that transformational leaders appreciate teamwork, accept ambiguity, and value people over the organization, which align exceptionally well with the areas of sportsmanship, conscientiousness and civic virtue that were prevalent factors in participant responses for this study. Similar to the research Farahnak et al. (2019), attributes perspectives where employees tend to reflect "positive attitudes toward the change being implemented if they

feel as though organizational leaders understand the potential challenges but have confidence that employees can overcome them and successfully implement the practice" (p.11). The critical element for such relationships to thrive between leaders and employees is fundamentally formed through consistent communication, which also is an aspect of civic virtue aligning to organizational citizenship behavior. The focus on keeping up with organization activities and value outcomes fostering buy-in, establishing model behaviors, and objectively gauge progress (Licorish & MacDonell, 2015) as well as the inherent need for these exchanges to occur at all levels aligning realities and critical drives that compel engaged participants to contribute to organizational purpose. Especially given critical failure points of transformational leadership including poor control, lack of buy-in, limited resource allocation, unrealistic time frames, and changing for wrong reasons, all of which Allio (2012) stress the significance of information exchange and ongoing participant support positively impacting for transformational leadership to drive viable change. As a result the creation and sense of positive change outcomes and associating those outcomes to employee behavior, and what Avey et al. (2008) defines as the principal criteria influencing positive organization behaviors being "hope, efficacy, optimism, and resilience" (p. 53) which are root drives for underlying change results and the criteria reflecting positive contributors to sustaining organizational change outcomes.

The challenge in sustaining enterprise change, often roots from inconsistency in transformational change commitments. The results from this study found correlation variances for both transformational and transactional leadership with a key finding in the correlational relationship of organizational citizenship behaviors and transactional leadership behaviors (figure 12), while the scope of the research did not deeply investigate the impact. The findings, especially within non-managerial levels indicates an opportunity for further investigation and can

be viewed as potential indicators of transactional leadership where passive guidance negatively

influencing how employees engage to perform above and beyond (Rath, 2016). With leadership

actions impacting the performance, awareness, and engagement of all members (Ahmed et al.,

2012) the challenge becomes when only a few participants drive long-term change results, where

research indicates long-term change usual taking a 5 to 10-year investment commitments in

order to achieve the desired end state (Maximini, 2015). Organizations often seeking alternative

strategies and basing the decision on longevity challenges or remain with the status quo in

strategy structure and other key areas, not able to fully understand the driving factors and lacking

the necessary insight to foster transformational change (Alshgeri, 2016). Overall the actions of

basing core organizational decisions and conduct to substantiate an environment of

transformation that aligns the success of organizational change outcomes as this study finds,

through positively associating them to both organizational citizenship behaviors and

transformational leadership, the resulting quality effects yielding constructive change are

evident.

Knowledge exchange. Finally, aspects of change readiness and execution, having a

powerful impact on leadership actions, which significantly impact relationships and behaviors

toward change outcomes (Rafferty et al., 2013; Hammoud, 2008). Considering the substantial

implications and association of effective change with employee involvement, this research study

joins prior research capturing a notable connection with the significance of knowledge exchange

as well as professional acumen at the organizational and individual level which establishes a

positive loop for the change process (Hussain et al., 2018) — explicitly finding significant

alignment with professional certifications held by participants and the higher correlation with the

study's variable measures. The resulting findings align with the importance of fostering "highly

dynamic environments," which exert consistent demands for adaptation during change endeavors (Spector. 2012, p. 30). The opportunity for collective behaviors drives engagement, specifically focusing on transformational leadership behaviors within learning organizations fostering a converging point in behavior influences which associates with transformational leadership behaviors collaborative aspiration and aid in setting it free (Mackay, 2010). For those employees who persistently broaden their capacity to learn and associate cognitively, achieve desired results through growth and the capacity to nurture expansive thinking patterns resulting in continuous learning to sustain organizational change. Where recommendations for action point to appealing evidence of collectively observing the significance of fostering content-specific knowledge and professional certifications for leaders, employees, and stakeholders.

The indications within this study provide evidence of transformational leadership fundamentally aligning with both impacts of change readiness and overall organizational citizenship behaviors, where further actions of organizations focusing on the guidance recommendation findings indicate a strong relevance to sustaining transformational outcomes and improving Agile and DevOp initiative enterprise adoption rates (Mayner, 2017).

Recommendations for Further Study

This quantitative correlational study emphasizes the positive relationship between transformational leadership behaviors and the aspects of change readiness and citizenship behaviors specifically within financial services organizations associated with Agile and DevOps initiatives, with the opportunity to build upon the growing body of knowledge aligning with the realization of change initiatives relating to Agile and DevOps. There are significant opportunities to expand the current body of knowledge in order to aid with scholarly research providing

business guidance in order to sustain enterprise change initiatives and value creation, employing adopting Agile and DevOps methodologies.

The present study focus was explicitly on quantitative outcome within the defined area of focus, given the extensive benefit of capturing qualitative data elements in order to build upon themes and add pragmatic approach to the quantitative findings (McCusker & Gunaydin, 2015) the opportunity to expand the present study with a mixed-method approach could yield the added insight and assessment of the phenomenon. Due to the extensive nature and time consumption of the mixed-method approach, there is also an opportunity for wide-ranging employment of the qualitative approach, especially with smaller focused groups in order to identify material evidence to support the hypotheses findings in a contextual manner. A critical area of opportunity is focusing research by appealing to organizational leaders and associates across various business units as well as cross-functional teams, concentrating at all levels of the organization to better understand fundamental drivers, how the organizational desires align with the transformational leadership approach to agile integration through the lens of qualitative themes and associating them with the broader Agile scaling initiatives (Fry & Greene, 2007; Dingsøyr & Moe, 2014). Also due to the inherent variable driven nature of this study and anonymous participant approach, future opportunities focusing research on a single organization or approaching the study via a qualitative method would likely allow a more profound association to be made regarding participant business relationships basing finds on team construct an overarching organization approach versus a general anonymous group study with unknown inter alignment of participants.

Additionally due to the nature of the study and focus of the findings, areas of opportunity that were not fully explored remain in the extent to which years of experience or team size

played into the relationship focus of transformational behaviors in this study, the research

discoveries did not find any significant correlations and was unable to leverage the data points in

a meaningful manner that produced beneficial findings. However, through utilizing either a

mixed-method approach or qualitative study, the contextual data could lead to beneficial

implications worth investigating (Oc, 2018). The researcher did discover evidence indicating

higher levels of transformational leadership in both management and non-management roles,

where professional certifications were held versus participants indicating not having an Agile or

DevOps related certification. The information presents an area of potential interest for further

studies as to the influence of certifications and significance in Agile change readiness and the

overall correlation to transformational leadership behaviors or other leadership styles.

Reflections

The researcher has found the topic of business leadership compelling and having personally

experienced the rewards and challenges of leadership through serving in various aspects and

functions of leadership for over twenty years. With significant roles in leading business teams to

provide client value through meaningful relationships as well as a particular focus on driving

financial outcomes. As a leader, the researcher understands the significance of influencing change

and the fundamental importance to organizations. Having a strong desire to pursue leadership

research in relationship to significant opportunities facing the current business marketplace. Today

scholars indicate the importance of focus intentionality and alignment with proper leadership

approach to identify the necessary mindset where Pazderski (2018) articulates "agility is the

paradigm shift everyone must attain" (p. 49). The researcher understands that becoming Agile is

not merely an application of a to-do list or following a present instructional guideline, but rather

an ongoing path toward for leaders and followers alike where junctions for value delivery often

occur as well as the opportunity for sustainable transparency with efficiency. The success of

business strategy and alignment with the overall organization objectives is a personal passion of the researcher, where opportunities to lead within the business marketplace have personally extend beyond career opportunities into non-profit board management as well as higher education course facilitation. Overall, with the researcher's leadership philosophies rooted in serving others through compelling value-added relationships.

In order to avoid potential researcher bias given the researcher having extensive leadership experience as well as working within organizations pursuing Agile and DevOps transformations, the present study was framed in a manner where the anonymous participant data was examined strictly for relevance to the research questions and hypotheses in order to determine the overall relationship to the three core variables and address the outlined study conditions. While the study was conducted as a moment in time the researcher acknowledges that change is ongoing where the attempt to identify critical influences for the relationship of transformational leadership in association with change readiness and organizational citizenship behaviors were based upon the anonymous panel participants individual perspective of the presented questions, where change being constant the opportunity to identify the impact of overall enterprise Agile and DevOps initiatives may not be fully reflected with the data due to limitation of the one-time survey. The researcher aligned with scholarly findings from Turetken, et al., (2017) where the focal opportunity for assessing transformational leadership impacts and the opportunity to quantify a correlation between organizational citizenship behaviors in order to understand how transformational leadership aids in accomplishing Agile and DevOps goals, where sustainability is a key success factor in which the researcher firmly acknowledges, additionally learning that the measurability of Agile change transformation and impacts present challenges as well as the need to align a trifecta of proper governance, team players, and organizational assets (Cosenz & Noto, 2018). Also, finding meaningful content addressing the beneficial appeal for a common

language of Agile and DevOps in order to scale change. Lastly, the researcher did not anticipate

the amount of research addressing the challenges with time commitments and how influential

success measures were aligned with timetable, which may or may not have impact on participant

perceptions with their own prior Agile and DevOps experience. Overall, along with time

challenges, the research did find alignment with resourcing budget constraints and proper

mindset challenges each associating in unique ways to initiate success, which were both

preconceptions held by the researcher (Makadok et al.,2018; Pazderski, 2018; Hardy, 1990).

Some areas where the researcher found beneficial learning to aid with leading through

challenges associated with scaling Agile and not failing, were found in the benefit of appropriate

investment resourcing with a leaders capacity to identify return on investment drivers through

seeking out incremental return achievements (Ambler, 2009; Dove 2005). Additionally, focusing

on cost control where challenges will arise in value delivery should cost outpace revenue from

the change outcome. Finally, the factors of leading transformation to sustainability and achieving

a stable Agile standard operating environment (SOE). The researcher has learned through

experience that transformation has tangible cost-benefit analysis measure; however, the resulting

study has affirmed the significance for the compelling case to leverage transformational

leadership behaviors focusing on incremental change drivers and celebrating the proactive

organizational citizenship behaviors which yield incremental value throughout the change

process.

Given the significance of processes driving value beneficial outcomes, the researcher

passionately believes that regardless of the path taken and the process followed. Challenges will

arise as we live in a broken world. Even the perfect process, leader, and participant will reach a

plateau maybe only for a moment or for longer, the law of economics can be considered in the

case of Pareto efficient impacts with making improvements in one area the law would anticipate

an area being worse off (Kompalla, Studeny, Bartels, & Tigu, 2016). During the research

process, the most significant and impactful finding which is exceptionally relevant to leadership

today is the compelling case made by the Deloitte Insights Human Capital Trends in 2018 and,

most recently the 2019 publication capturing context on leadership for the 21st century and the

present digital disruption within the marketplace. Deloitte (2019) states, executives within the C-

suite are finding the ask to collaborate across business units and functions, where it is imperative

for leaders across the organization to learn skills to operate in team networks. Their research,

however, indicates that while these new "leadership capabilities" are expected, leaders are

presently "promoting traditional models and mindsets—when they should be developing skills

and measuring leadership in ways that help leaders effectively navigate greater ambiguity, take

charge of rapid change, and engage with external and internal stakeholders" (p. 39).

The researcher also acknowledges that while fundamentally, the world has been

undergoing a digital transformation over the past decade, where failures to change present unique

challenges to organizations (Denning,2018; 2018a; 2018b; 2018c). In today's connected

marketplace the discovery of ideas and intensity for innovation as Friedman (2005) outlines the

"flatting of the world", the need for iterative responsiveness and adoption of scaling process

along with techniques to effectively provide value the researcher understands and recognizes the

present challenges which can lead to failure given the dynamics of leadership and influential

factors encompassing tangible success at scale. The critical significance for large-scale effective

change in organizations quantified by Centola, Becker, Brackbill, and Baronchelli (2018), who

indicate a quarter or participants must take a stand in order to effect a social change "tipping

point" for any initiative or movement. In considering the significance of leadership influence and

the shifting demands in today's marketplace (Deloitte, 2019) the wide-ranging impact Hernandez (2008) provides a vivid leadership perspective promoting stewardship behaviors within organizations, where the tremendous level of duty on leaders to be responsible and accountable caretakers as well as "future generation role models". With strong behaviors influencing leader development. "Fundamentally, because people cannot directly reciprocate the good or evil left to them by previous generations, they 'reciprocate' by behaving similarly to the next generation" (p.2). The awareness and perception of leaders affecting change become cultivated through a posture of listening (McHugh, 2015) in today's distracted world, becoming more engaged and attentive to those around us. Shaping leaders through listening acclimating to marketplace impacts and being able to relate to serving others in ways that achieve value-added outcomes. McHugh (2015) provides a clear context where "God himself is the God who hears, and we too can learn to hear what God may be saying through creation, Scripture, and people." It becomes the alignment that Blackaby and King (1998) tender in seven realities of experiencing God; where the first reality is God working, then inviting us through Christ to have relationship with Him, God invites us to share in His work, speaking through others God communicates, leading to a belief crisis, causing course adjustment, finally bring a revelation of obedience and fully experiencing God. It becomes the seven realities cycle that Blackaby and King bring to life as a "posture" of transformational leadership with a Biblical lens, listening to effect change, in an ever dynamic world with God's presence.

Summary and Study Conclusions

Focusing on examining hypotheses associated with the correlational relationship between transformational leadership and both change readiness and organizational citizenship behaviors. By addressing research questions assessing leadership style and the underlying business problem

relating to the high probability of failure organizations face when engaging in enterprise Agile and DevOps transformational change initiatives. Finding a positive correlation after examination of hypotheses associated with the general problem seeking to understand the association of transformational leadership styles and impacts in adopting agile methodologies across the organization within regional financial services companies with a presence in the South Eastern United States. The resulting study surveyed 390 anonymous participants with varying backgrounds and organizational roles, utilizing three principal instruments to measure transformational leadership, organizational change readiness, and organizational citizenship behavior. Through participant data aggregation and conducting statistical analysis to analyze descriptive properties as well as reliability of the data constructs (O'Dwyer & Bernauer, 2013; McCall, 2018). Hypothesis validity with correlational analysis and regression testing each dependent variable construct in conjunction with the constant independent transformational leadership variable. The findings substantiate the area of focus and opportunity through identifying the relationship transformational leadership styles provide with insight into Agile teams and the opportunity to scale agile methodology adoption within the enterprise. Supporting a possible solution to what researchers have found as significant leadership style challenges in Agile teams' ability to associate expectation while adopting agile methodologies across the organization (Ferreira, de Lima, & da Costa, 2012; Parker, Holesgrove & Pathak 2015; Dikert et al., 2016). Through address uncertainty the present study provides insight into the most beneficial leadership styles while adopting Agile methodologies where researchers have found unsustainable business impacts influencing Agile outcomes, due to the lack of establishing dynamic theories in connection with leadership styles (Nkukwana, & Terblanche, 2017; Kalenda, Hyna, & Rossi, 2018; Fatema & Sakib 2017).

The actionable recommendations and outcomes of this study seek to align value-added outcomes in alignment with change readiness factors, given the increased correlation of change readiness factors, including cognitive and intentional readiness as well as, the significance of strategic association through shaping collaboration and change vision, with a focus on collective efficacy overall leading to sustaining change drivers. Overall by linking the operational complexities of Agile transformation and enterprise scaling within the marketplace mandates consistent leadership styles to succeed. The present study affirms the correlation of transformational leadership styles and opportunity to root them within every layer of the organization, from strategy to personnel, which feed and sustain organizational culture. Where the capacity for leaders to create and sustain culture change has significant value impacts and influences from employees, customers, as well as the broader marketplace (Jones & Recardo, 2013). Finally, the significance of professional knowledge and exchange to the benefit of organizational transformation where the present study finds influential relationships at all organizational levels and the impact of change readiness in addition to organizational citizenship behaviors — joining the 2019 Deloitte Insights Human Capital Trend findings where organizations cite the top two highest "trend urgency" of learning and leadership, with "importance outstripping readiness". Where Deloitte (2019) reports 46% and 41% of participating organizations indicated they were "ready or very ready" in areas of learning and leadership, respectively, and with 86% of participants stating learning was "important or very important" and 80% finding the same with leadership. The present research findings identify the association of organizational readiness and employee social citizenship responsibility with applicability to transformational leadership, bringing light to the significance of grooming and sustaining leaders at all levels of the organization.

It becomes understanding the influential impacts and relevance within today's technology-driven dynamic marketplace. Where the opportunity to continue building the body of knowledge with future studies leading scholars to pursue qualitative methods in association with the subject matter (Antonakis & House, 2013; Dumas, 2018). In order to better understand the phenomenological associations in addition to capturing pertinent research from smaller groups focusing on findings and aligning elements of the theoretical and conceptual frameworks, further validating this study as well as the broader subject of transformational leadership and association to Agile methodologies (Mayner, 2017). Fundamentally the goal of the research sought to provide organizations with relevant information in order to associate leadership styles that best promote Agile and DevOps methodologies in order to scale them across enterprises — allowing organizations to further endeavors of Agile transformation through rolling up sleeves, jumping in and leading through transformational service, formally developing new approaches and professional applications that meet the broader enterprise (Jones & Recardo, 2013). Where the critical opportunity, however, becomes leadership capacity to effect change strategically and cross the barrier (Hutt, Walker, & Frankwick, 1995), testing and learning throughout the process. With findings affirming the benefits that transformational leadership behaviors have on change readiness and engaging outcomes through the citizenship behaviors of those involved. As well as confirming the significance of impactful leadership within the digitally propelled marketplace, where the fabric of organizational leadership embraces technology demanding refinement of traditional methods, adopting proven models, while pursuing validation of hybrid approaches seeking to retool dynamic business leaders of tomorrow.

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Appendix A: 2018 Labor Force Statistics

Industry	Total employed	2018 Percent of total employed				
		Women	White	Black or African American	Asian	Hispanic or Latino
Total, 16 years and over	155,761	46.9	78.0	12.3	6.3	17.3
Information	2,919	38.3	78.3	11.6	7.3	12.2
Newspaper publishers	178	46.4	85.6	6.9	4.2	8.4
Periodical, book, and directory publishers	198	58.3	85.5	6.8	6.4	6.3
Software publishers	86	33.5	74.0	2.2	21.8	5.0
Motion pictures and video industries	494	32.3	81.7	10.3	3.6	15.7
Sound recording industries	44	-	-	-	-	-
Radio and television broadcasting and cable subscription programming	550	32.7	78.4	15.2	4.4	13.7
Internet publishing and broadcasting and web search portals	153	40.0	66.6	4.9	26.5	12.3
Wired telecommunications carriers	434	30.6	69.9	19.3	8.0	12.8
Other telecommunications services	439	26.9	76.3	11.9	9.1	12.3
Data processing, hosting, and related services	101	45.8	80.3	6.9	8.6	12.2
Libraries and archives	214	78.1	87.3	7.5	2.5	11.3
Other information services	29	-	-	-	-	-
Financial activities	10,649	52.6	79.7	10.2	7.5	12.6
Finance and insurance	7,376	55.0	78.7	10.2	8.4	11.4
Banking and related activities	1,992	58.2	74.5	11.2	11.4	12.1
Savings institutions, including credit unions	257	67.3	82.5	8.9	3.8	14.9
Nondepository credit and related activities	1,004	52.4	76.4	11.0	9.0	14.4
Securities, commodities, funds, trusts, and other financial investments	1,325	39.9	82.9	5.4	9.4	8.4
Insurance carriers and related activities	2,797	59.7	80.2	11.6	6.1	11.0
Real estate and rental and leasing	3,273	47.0	82.0	10.2	5.2	15.4
Real estate	2,869	49.5	83.2	9.0	5.4	15.1
Rental and leasing services	405	29.5	73.3	19.2	4.1	17.2
Automotive equipment rental and leasing	185	32.5	65.8	25.8	6.1	13.7
Video tape and disk rental	8	-	-	-	-	-
Other consumer goods rental	106	31.7	72.4	18.4	2.8	23.7
Commercial, industrial, and other intangible assets rental and leasing	106	21.9	86.0	9.4	2.3	17.9
Professional and business services	18,950	41.5	78.1	9.9	9.0	15.9
Professional and technical services	12,105	42.2	79.0	6.6	12.1	8.7
Legal services	1,673	56.2	87.5	6.4	4.0	10.9
Accounting, tax preparation, bookkeeping, and payroll services	1,131	60.0	81.0	7.9	8.6	8.7
Architectural, engineering, and related services	1,767	25.5	84.8	5.9	6.9	9.0
Specialized design services	405	57.7	84.9	3.4	7.7	13.1
Computer systems design and related services	3,339	27.2	67.1	7.0	23.6	6.6
Management, scientific, and technical consulting services	1,686	43.2	79.8	7.6	10.7	7.9
Scientific research and development services	616	45.6	75.6	8.3	13.8	8.3
Advertising, public relations, and related services	629	47.5	85.0	5.0	8.5	10.0
Veterinary services	404	84.3	92.3	2.5	2.3	9.0
Other professional, scientific, and technical services	456	55.6	83.2	6.8	7.1	11.6

U.S. Bureau of Labor Statistics 2018 Labor Force Statistics from the Current Population Survey.

Appendix B: 2017 Women in the Labor Force Bureau of Labor Statistics Southeast US

Industries at a Glance (Finance and Insurance: NAICS 52)	U.S. BUREAU OF LABOR STATISTICS (detailed occupation and gender, 2017 annual averages) Statistics, Women in the labor force: a databook			
	Exuctive Management 28 % Women	Front-Line Management (non-executive) 33% Women	Executives and Front-line Management Totals - Women Only	Non-Management Totals 41% Women
Alabama	31	663	694	1,874
Florida	414	3,538	3,952	11,656
Georgia	129	2,742	2,871	5,777
Kentucky	50	782	833	1,726
Mississippi	22	475	498	422
North Carolina	73	1,736	1,809	8,085
South Carolina	50	759	809	1,911
Tennessee	221	1,267	1,488	4,227
Southeast Totals	991	11,963	12,954	35,678

U.S. Bureau of Labor Statistics (Detailed occupation and gender, 2017 annual averages)

Statistics, Women in The Labor Force: a Databook.

Appendix C: FDIC QBP Southeast State Banking Performance Summary

State Banking Performance Summary

FDIC-Insured Institutions

		All Insured Institutions 12/31/2018			All Insured Institutions 12/31/2017			All Insured Institutions 12/31/2016		
		All Institutions	Assets less than $100 million	Assets greater than $100 million	All Institutions	Assets less than $100 million	Assets greater than $100 million	All Institutions	Assets less than $100 million	Assets greater than $100 million
National	Number of institutions reporting	5,406	1,278	4,128	5,670	1,407	4,263	5,913	1,541	4,372
	Total employees (full-time equivalent)	2,067,086	19,655	2,047,431	2,076,128	21,975	2,054,153	2,052,978	24,012	2,028,966
Alabama - 01	Number of institutions reporting	119	28	91	120	35	85	127	36	91
	Total employees (full-time equivalent)	40,037	477	39,560	40,682	693	39,989	40,340	714	39,626
Kentucky - 21	Number of institutions reporting	148	30	118	155	33	122	164	34	130
	Total employees (full-time equivalent)	13,438	433	13,005	14,127	493	13,634	13,953	510	13,443
Mississippi - 28	Number of institutions reporting	73	11	62	77	13	64	79	14	65
	Total employees (full-time equivalent)	21,077	191	20,886	19,938	241	19,697	19,671	259	19,412
Tennessee - 47	Number of institutions reporting	144	21	123	151	24	127	157	26	131
	Total employees (full-time equivalent)	22,380	424	21,956	22,436	538	21,898	19,542	547	18,995
Florida -12	Number of institutions reporting	117	17	100	133	16	117	149	18	131
	Total employees (full-time equivalent)	20,998	359	20,639	21,924	333	21,591	22,090	388	21,702
Georgia -13	Number of institutions reporting	168	31	137	177	36	141	183	37	146
	Total employees (full-time equivalent)	41,354	598	40,756	42,706	692	42,014	42,732	703	42,029
South Carolina - 45	Number of institutions reporting	50	12	38	53	13	40	56	13	43
	Total employees (full-time equivalent)	7,478	182	7,296	7,481	203	7,278	6,616	209	6,407
North Carolina - 37	Number of institutions reporting	47	11	36	52	13	39	62	13	49
	Total employees (full-time equivalent)	182,312	143	182,169	189,574	158	189,416	197,752	162	197,590
BLS Southeast Region	Number of institutions reporting	866	161	705	918	183	735	977	191	786
	Total employees (full-time equivalent)	349,074	2,807	346,267	358,868	3,351	355,517	362,696	3,492	359,204

Source: Call Report and Thrift Financial Report

Prepared by the FDIC-Division of Insurance and Research

Appendix D: OES Occupational Coding and Title (Finance and Insurance: NAICS 52)

NAICS	Title
52	Finance and Insurance

OCC Code	Group
11-0000	Management Occupations
13-0000	Business and Financial Operations Occupations
15-0000	Computer and Mathematical Occupations
43-0000	Office and Administrative Support Occupations

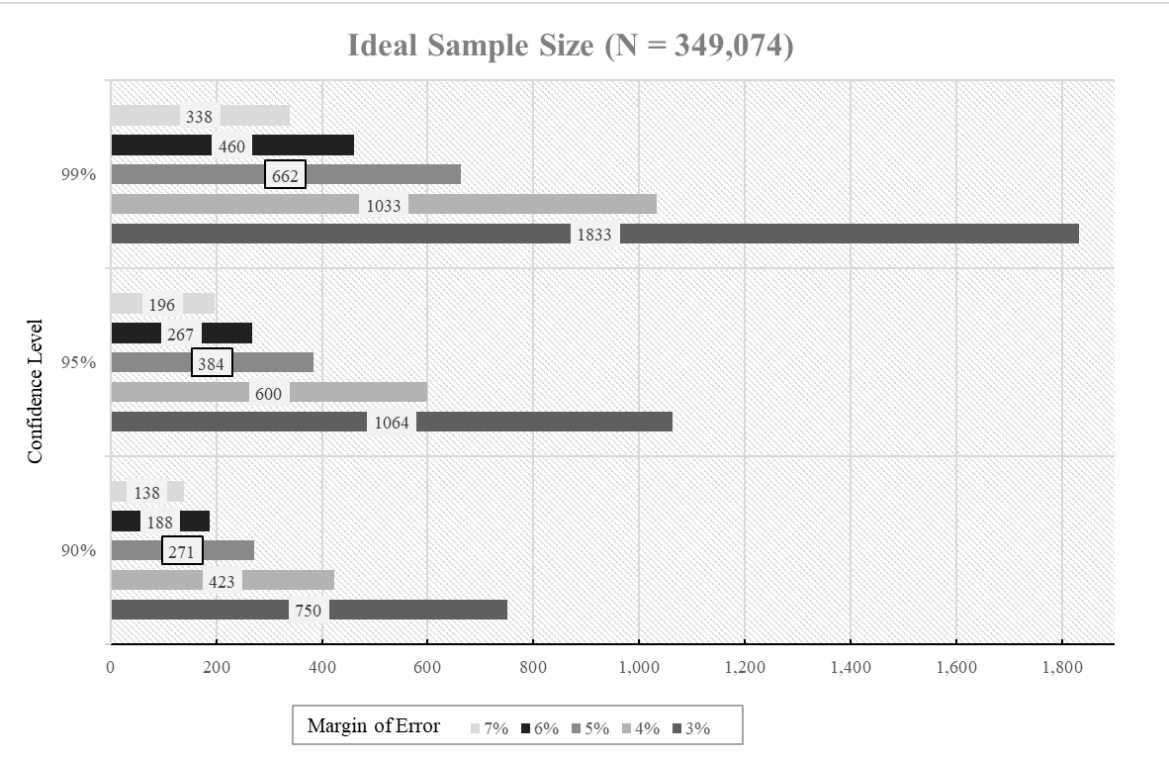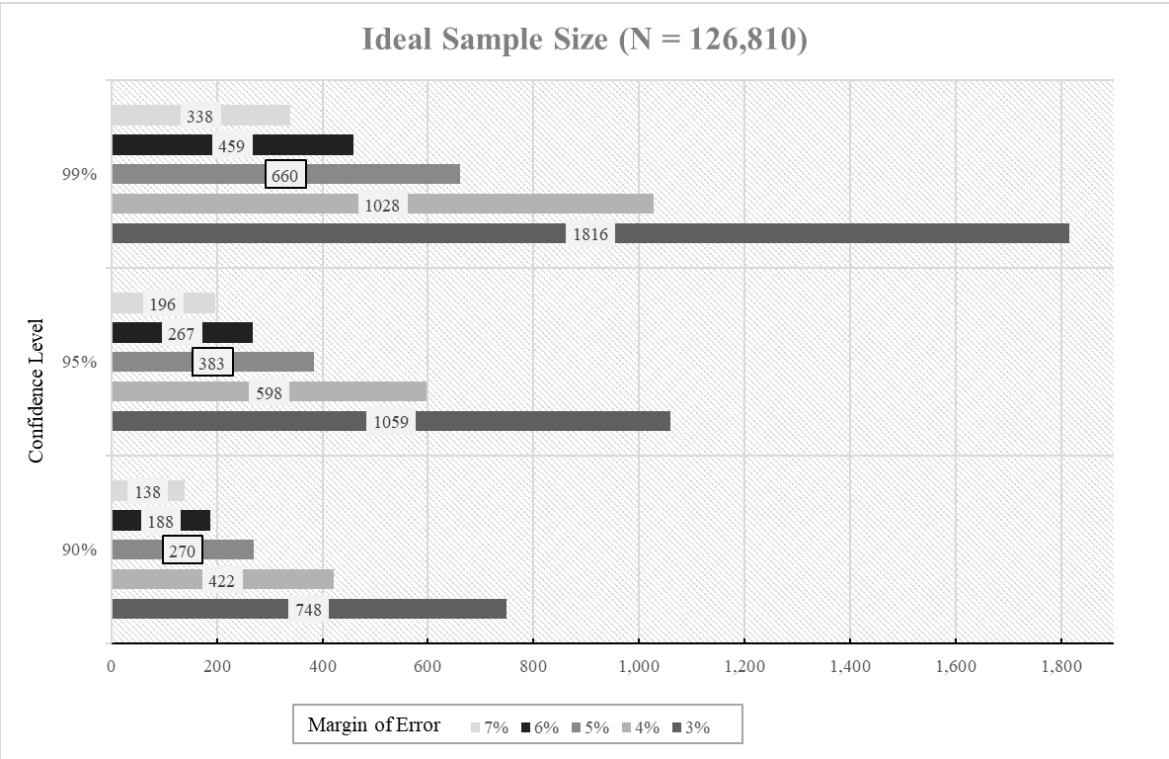| OCC Code	Role	Title
11-1011	mgt	Chief Executives
11-1021	mgt	General and Operations Managers
11-3021	mgt	Computer and Information Systems Managers
11-9199	mgt	Managers, All Other
13-1111	non-mgt	Management Analysts
13-1199	non-mgt	Business Operations Specialists, All Other
15-1121	non-mgt	Computer Systems Analysts
15-1122	non-mgt	Information Security Analysts
15-1131	non-mgt	Computer Programmers
15-1132	non-mgt	Software Developers, Applications
15-1141	non-mgt	Database Administrators
15-1142	non-mgt	Network and Computer Systems Administrators
15-1143	non-mgt	Computer Network Architects
15-1151	non-mgt	Computer User Support Specialists
15-1152	non-mgt	Computer Network Support Specialists
15-1199	non-mgt	Computer Occupations, All Other
41-1012	non-mgt	First-Line Supervisors of Non-Retail Sales Workers
43-9011	non-mgt	Computer Operators
43-9021	non-mgt	Data Entry Keyers

Appendix E: Southeastern United States 2018 Occupational Employment Statistics

Industries at a Glance (Finance and Insurance: NAICS 52)

Southeastern United States 2018 Occupational Employment Statistics - Industries at a Glance (Finance and Insurance: NAICS 52)

	Research Study Specific Category Totals	Executive Management	Front-Line Management (non-executive	Management Executives and Front-line Management Totals	Non-Management Totals	% Total Management	% Executive Mgmt	% Front Line MGR	% Non Management
Alabama	6,690	110	2,010	2,120	4,570	32%	2%	30%	68%
Florida	40,630	1,480	10,720	12,200	28,430	30%	4%	26%	70%
Georgia	22,860	460	8,310	8,770	14,090	38%	2%	36%	62%
Kentucky	6,760	180	2,370	2,550	4,210	38%	3%	35%	62%
Mississippi	2,550	80	1,440	1,520	1,030	60%	3%	56%	40%
North Carolina	25,240	260	5,260	5,520	19,720	22%	1%	21%	78%
South Carolina	7,140	180	2,300	2,480	4,660	35%	3%	32%	65%
Tennessee	14,940	790	3,840	4,630	10,310	31%	5%	26%	69%
Southeast Totals	126,810	3,540	36,250	39,790	87,020	31%	3%	29%	69%

Appendix F: Ideal Sample Size for Given Populations

Ideal Sample Size (N = 126,810)

Ideal Sample Size (N = 349,074)

Appendix F: Liberty University IRB Approval

Dear Christopher Kuiper,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

> (2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if . . . the following criteria is met:
>
> > (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

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Appendix G: Instrument Permission(s)

Multifactor Leadership Questionnaire™

Instrument (Leader and Rater Form)

and Scoring Guide
(Form 5X-Short)

by Bruce Avolio and Bernard Bass

Published by Mind Garden, Inc.

info@mindgarden.com
www.mindgarden.com

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OCQ CPR Instrument Approval

Dear Christopher,

After careful review of your research proposal entitled Relationship of transformational leadership and organizational change during enterprise Agile and DevOps initiatives in financial service firms, I have decided to grant you permission to utilize the Organizational Change Questionnaire – Climate of Change, Processes, and Readiness (OCQ C, P, R) questionnaire tool. In order to conduct your research at Liberty University School of Business.
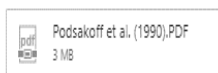
Sincerely,

Dr. Dave Bouckenooghe
Brock University

OCB Instrument Approval

Re: Permission Request - OCB Questionnaire Doctoral Research

ⓘ   You replied on Wed 6/26/2019 4:49 PM

Ⓟ   Podsakoff,Philli
Wed 6/26/2019 4:28 PM
Kuiper, Christopher ⌄

📄 Podsakoff et al. (1990).PDF
3 MB

Christopher:

You have permission to use the OCB questionnaire, as long as it is for research purposes. I assume that you already have a copy of the questionnaire. However, if you don't I have attached a copy of the article in which the questionnaire first appeared. The items are listed in Table 5, and the anchors for the scale are described in the second paragraph on page 116.

Good luck in your research.

Phil Podsakoff