Psychological Capital as a Catalyst for Effective Organizational Change Implementation

Heather N. Sager

A Dissertation Submitted to the Faculty of
The Chicago School of Professional Psychology
In Partial Fulfillment of the Requirements
For the Degree of Doctor of Philosophy in Business Psychology

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Heather Sager
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Approved By:

Dr. Jennifer Thompson, Ph.D., Chairperson
Professor

Dr. George W. Hay, Ph.D., Member
Associate Department Chair

Dr. Charmon Parker-Williams, Ph.D., Member
Assistant Professor & Internship Director
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Dedication

This study is dedicated to my grandfather, Gustav A. Sager Sr., who was my biggest supporter. His encouragement and confidence in me for as long as I can remember is why I had the tenacity to not only pursue but complete a PhD. He always said, “an education is one of the few things no one can ever take from you”. I hope to take it a step further and give back, leveraging my educational background to help others whenever possible in his honor. You are deeply missed, opa.
Abstract
This study has three main components: employee engagement, Psychological Capital (PsyCap), and organizational change. The goal of the study was to better understand what organizational and individual factors may contribute to an employee’s perception of an organizational change and provide insights of what improve change implementation success. A gap in the literature called for the development of a measure to evaluate individual perceptions of organizational change, and organizational factors believed to influence change success; the measure developed for this study is called the Sager-Thompson Change Inventory (STCI). The results of the study are exploratory and preliminary in nature and support further research around individual factors having a relationship with organizational change success perception. The STCI has the potential to be an adequate evaluation of one’s perception of their organization’s change implementation success, and organizational factors believed to influence change implementation success.

Keywords: Psychological Capital, employee engagement, organizational change
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Chapter 1: Nature of the Study

Background

Rapid organizational change is the precipitating reason that for over a decade Chief Executive Officers (CEOs) and other Senior Level staff have reported that successfully implementing change initiatives has been one of their top struggles. Between a 60 to 90 percent of change initiatives fail depending on the nature of the initiative, with changes aimed at impacting culture versus tangible outcomes having the highest failure rates across industries (Burnes, 2011, p.2). Change is necessary for organizations to thrive; with so few change initiatives being successfully implemented, a clear need arises for more information why change implementation fails or succeeds. Understanding these factors are critical to organizational success (Burnes & Jackson, 2011; Noble, 2014; Wolf, 2011). The current literature suggests that several organizational factors have a positive relationship to successful change implementation.

A literature review focused on employee performance through organizational change was conducted to gain an understanding of the current research. Only relevant, peer-reviewed studies were considered. Journals of Psychology, Business, Human Resources, and Change Management all offered information on the topic of organizational change, and suggested evidence that positive psychology-based interventions facilitated greater employee engagement. Further, engagement has been found to have a relationship with change implementation success factors. However, none have sought to quantify the amount to which positive psychology tactics influence success of organizational change events.

For the purpose of this study, organizational change will refer to an organizational entity’s change in state, function, or form over time, which has some impact on employees (Van de Ven & Sun, 2011, p.3). Therefore, an organizational change event will refer to a specific time, project, or initiative where one’s organizational entity experienced a change in state, function, or
form (Van de Ven & Sun, 2011). The impact of a change event on an employee may be direct, influencing one’s job duties or tools to complete their duties. A change event may also have an indirect impact, where the resources or people that one depends on daily have been affected (Butterfield, Borgen, Amundson, Erlebach, 2010).

Psychological Capital (PsyCap) is a composite higher-order factor from positive psychology, describing a state of development comprised of four distinct factors: Hope, Efficacy, Resilience, and Optimism (Luthans, Avolio, & Avey, 2007; Allen, Brown, Karanasios, & Norman, 2013). Hope is one’s general ambitious outlook towards current events and outcomes, while Efficacy describes those with confidence in their personal ability to positively influence events (Luthans, Avey, & Patera, 2008). Resilience refers to one’s ability to withstand adversity and overcome rejection, and Optimism refers to a general outlook that the goals are achievable.

The Psychological Capital Questionnaire (PCQ) has demonstrated predictive validity in previous studies between PCQ score and one’s engagement (Mills, Culbertson, & Fullagar, 2012; Wefald, Mills, Smith, & Downey, 2012). Research posits that employee engagement levels oftentimes decline during organizational change. Better understanding of the extent to which one’s PsyCap factors are impacted by an organizational change event could help improve how effectively change events are implemented.

Employee engagement in this study refers to an employee’s passion about their work, and has three components: Vigor, dedication, and absorption. Vigor refers to the amount of effort one puts forth in their work; dedication is specific to one’s commitment to their employer and/or job duties, and absorption encompasses one’s genuine interest in their work (Wefald & Downey, 2009). The value in defining one’s employee engagement level is that it helps to identify those with mutually beneficial relationships with their organization (Alonso & Mo, 2014; Wefald &
Downey, 2009). The Utrecht Work Engagement Scale (UWES) has demonstrated statistically significant empirical evidence as a reliable measurement of employee engagement and is considered the standard in academic assessment of engagement (Mills, et al., 2012).

**Problem Statement**

Relatively unstudied are how individual and organizational factors may influence employee engagement around and organizational change event; better understanding this relationship offers the potential to improve organizational change implementation success rates.

**Purpose of the Study**

The purpose of this research is to better understand how individual and organizational factors may influence employee engagement around a change event.

**Research Questions and Hypotheses**

Research Question 1: Is the Sager-Thompson Change Inventory developed by the researchers of this study a valid and reliable predictor of organizational change success?

Research Question 2: Is there a relationship between one’s PsyCap score and their employee engagement?

\[ H_1: \text{There is a predictive relationship between PsyCap score and employee engagement.} \]

Research Question 3: Is there a relationship between the Sager-Thompson Change Inventory and employee engagement during an organizational change event?

\[ H_2: \text{There is a predictive relationship between the Sager-Thompson Change Inventory and engagement around an organizational change event.} \]

Research Question 4: Do individual factors influence engagement more than organizational factors during an organizational change?

\[ H_3: \text{PsyCap is more influential to employee engagement during a change event than organizational factors.} \]
Research Question 5: Does the STCI predict perception of organizational change success?

H₄: The Sager-Thompson Change Inventory predicts the participant’s perception of the success of their most recent, large change event within their current organization.

**Theoretical/Conceptual Framework**

Positive Psychology, a branch of psychology focused on individual strengths and potential, was formally introduced by Martin Seligman in the late 1990s, and is alluded to by Maslow and Kuhn within their publications preceding this “branch” of psychology in the 1950s and 1960s (Blau, 1977; Fernández-Ríos & Novo, 2012; Schultz & Schultz, 2008). This theoretical orientation fosters the individual-factor approach to looking at organizational efficiency and has led to numerous theories and constructs that have been supported by research to be useful in the workplace. One of those composites that has especially promising implications for understanding organizational efficiencies especially through change events is Psychological Capital (PsyCap) (Avey, Luthans, Smith, & Palmer, 2010; Burnes, 2011).

**Scope of the Study**

The scope of the study is limited to evaluating two individual factors: the composite employee engagement score and PsyCap score, along with organizational factors related to change. Written organizational change survey items referred to as the Sager-Thompson Change Inventory (STCI) ask participants to self-report whether they have recently experienced a change event, with parameters clearly defining what constitutes a change event. Professionals with varying levels of work experience and education are expected to have participated in the survey. A minimal amount of work experience, two years with six months in one’s current role, were required to ensure enough relevant personal experience.

**Definition of Key Terms**
Employee engagement. The extent to which an employee is passionate about their work, and consists of three components: Vigor, Dedication, and Absorption.

Ethics. Defined as how fairly employees perceive their organization or colleagues treat others.

Organizational change. For the study, this is defined as an organizational entity’s change in state, function, or form over time, having some impact on employees (Van de Ven & Sun, 2011, p.3).

Organizational change event. This refers to a specific time, project, or initiative where one’s organizational entity experienced a change in state, function, or form (Van de Ven & Sun, 2011).

Psychological Capital. Otherwise referred to as “PsyCap”, is a state of development comprised of four distinct factors: Hope, self-Efficacy, Resilience, and Optimism (Luthans, et al., 2007).

Significance of the Study

For over a decade Chief Executive Officers (CEOs) and other Senior Level staff have self-reported in numerous studies, including those by McKinsey & Company, that successfully implementing change initiatives has been one of their top struggles (Burnes, 2011, p.2; Burnes, & Jackson, 2011). Organizational change implementations are a growing area of opportunity across industries, with failure rates gradually increasing for many years (Alagaraja, 2013; Harmon, Green, & Goodnight, 2015). Change implementation is notoriously difficult and has high failure rates, on average between 60-90% (Burnes & Jackson, 2011; Warrick, 2009). Better understanding both the individual and organizational factors that contribute to change implementation success promises to provide insight on how to improve success rates.
Summary

In Chapter 2, this study will begin defining and discussing organizational change. Then PsyCap and its factors and applicability to organizational change events will be discussed. Finally, employee engagement and its three components, and application to organizational change will be detailed. Hypotheses based on the literature review will be stated, followed by potential for future research. Chapter 3 will discuss methods of data collection and analysis, population, and hypotheses, while Chapter 4 provides results, discussion, and study limitations. Finally, Chapter 5 provides insight into future research opportunities.
Chapter 2: Literature Review

Introduction

Organizational change is a broad phenomenon referring to an organization moving from a present-state to an altered future-state (Van de Ven & Sun, 2011). Organizations inevitably need to undergo change, which has been a notoriously difficult process with low success rates. Three major organizational factors have been found to increase organizational change implementation success: Open culture, organizational ethics, and follow-up (Burnes & Jackson, 2011). These factors were identified by grouping together the most commonly described organizational attributes through a comprehensive review, and factors that can be practically measured.

Literature was considered if it was peer reviewed, published in a reputable journal, focused on business, psychology, or sociology, and related to the subject matter of this study: engagement, Psychological Capital, or organizational change. Although well-known studies believed to have informed the related subject area were included (ex: Schaufeli’s work around employee engagement, and Burke-Litwin’s work around organizational change), work published within the last eight years accounted for most of the literature considered. This was to ensure the latest advances in what is known around these areas are considered for this study. Additionally, the literature needed to include, or at least suggest, that its findings could be applied to numerous industries and cultures, since it was the goal of this study to be as generalizable as possible.

A wealth of literature and research exists showing the importance of organizational factors that relate to organizational change implementation success; however, an ideal test of existing models and theories’ validity does not yet exist (Burke, 2011). Less studied are the individual factors that contribute to organizational change success, leveraging employees within organizations to help drive change (Harrington & Voehl, 2015). Psychological Capital (PsyCap) has been found to relate to employee engagement, and employee engagement has been shown to
be a good indicator of how effective employees believe change implementation was executed (Straetmans & Thompson, 2015).

Researchers of this study sought to understand what relationship exists between individual factors evaluated by Psychological Capital (PsyCap), organizational factors evaluated by the Sager-Thompson Change Inventory (STCI), and employee engagement around a change event. The importance of such a relationship is the potential to develop individual success factors influenced by PsyCap, which could then improve organizational change implementation success rates. This literature review will discuss organizational factors of successful change events, PsyCap as an individual factor, and employee engagement, an outcome variable. Diagram 1 demonstrates the organizational change success factors developed for this study. The results related to the reliability, validity, and predictive nature of the STCI are discussed in Chapters 4 and 5.

*Figure 1. Sager-Thompson Change Inventory theoretical design.*
Organizational Factors

Organizational change is a broad phenomenon referring to an organizational entity moving from a present-state to an altered future-state (Van de Ven & Sun, 2011). Organizational change initiatives are a growing area of opportunity across industries (Alagaraja, 2013; Harmon, et al., 2015). Implementations are notoriously difficult and have high failure rates (Burnes & Jackson, 2011). Studies that were used to inform the literature review, such as those authored by Burke and Litwin, which have incredible insights into the process of organizational change, emphasize the process itself and suggested steps an organization should take to implement change.

Numerous resources, many of which are referenced in this study, are consistent with Burke-Litwin’s management of organizational change, which is perhaps the best known and most relevant model. However, Burke acknowledges that although there is plausible support of the Burke-Litwin framework, it is possible that both consistent studies and non-referenced studies may not fully support the assumptions of their model. Furthermore, there is not yet (as of 2011 or subsequent editions of this work) an “ideal test of the model’s validity” that has been published (Burke, 2011, p. 230).

A need remains for an ideal measure that tests the various elements of the organizational change frameworks that is easy to administer for practical reasons, rather than a comprehensive qualitative or longitudinal study (Burke, 2011). Such a measure would allow one to potentially evaluate the effectiveness of change implementation and the elements believed to drive change, such as thorough communication. The ability to measure change perceptions and the elements that are believed to influence change success is important, so that organizations can evaluate how they are doing before the end of a change initiative and make ‘course correction’ as needed, as
well as having a uniform assessment of how employees perceive the change initiative. Through review of the literature, there are known organizational factors that contribute to success, which were used to inform the development of the STCI: Open Culture, organizational Ethics and Follow Up (Titrek, Polatcan, Gunes, & Sezen, 2014; Waltuck, 2012).

**Open Culture.** First, Open Culture is defined as one where employees feel a closeness with others at their workplace, frequently communicate, and communicate openly with peers as well as managers. The term “culture” refers to an organization’s norms and values that are demonstrated in how employees treat one another (Armenakis, Brown, & Mehta, 2011; Heyne & Gallagher, 2015). An “open” culture is one where there are few barriers between leaders and staff in terms of accessibility and communication. Culture is an important consideration since there is a greater success rate of change initiatives that are aligned with the culture of the organization, than when the initiative is not aligned to employees’ perceived culture of an organization (Arbab Kash, Spaulding, Johnson, & Gamm, 2014; Muscalu, 2014; Smollan & Sayers, 2009). Open Culture is defined by two primary components: quality communication and having relationships between management and staff.

First, relationships between leaders/managers oftentimes are directly related to the organization’s hierarchy structure and refers to the extent to which staff believes they are included in leaders/manager’s decision-making process. Some organizations have a great deal of power distance between roles (steep hierarchy), while others embrace an “open door policy” and include employees from all areas of the company in making decisions and disseminating information (flat hierarchy). Inclusion of employees in the decision-making process has been found to foster closer relationships, compared to organizations with a large power-distance or steep hierarchy (Armenakis, et al., 2011; Schein, 1990).
It is important to remember that this is very broad spectrum, and geographic location may play a role in identifying where a company fits on this spectrum (Boga & Ensari, 2009). Cultural context must be considered when evaluating the relationship between management and staff. For example, in Asia, a flat hierarchy may be considered relatively steep by Western standards and vice versa; however, this study will focus solely in the United States (Halsall, 2008).

Second, communication that is characterized by frequency, trust, and thoroughness is a key component of Open Culture (Burnes & Jackson, 2011; Muscalu, 2014). Communication not only serves practical value, ensuring employees are clear in their expectations, but also heavily influences the culture (Harrington & Voehl, 2015). Communication may be the only connection employees have with leadership and can influence their perception of leadership and initiatives that leadership endorses.

Frequency of communication refers to employees knowing what they need to know and when they need to know it. Researchers have found that the more frequently leaders/managers discuss change with employees, the more likely the employees are to embrace organizational change (Armenakis, et al., 2011; Cooper, Nieberding, & Wanek, 2013; Kaiser, & Overfield, 2011). Though subjective in nature and may vary by employee, “frequent” communication broadly refers to essential information being communicated often enough that employees feel they are informed about what matters may affect them in their workplace (Cooper, et al., 2013).

Trustworthy communication is perhaps the most pervasive characteristic of an Open Culture. Trustworthy communication means that leadership/management is perceived to be approachable by staff, and that one can be honest without fear of negative repercussion. This helps establish a feeling of involvement and importance among employees and is believed to be

Thorough communication is the employee’s perception that they know all the essential components to workplace change and influences that will impact their work (Muscalu, 2014). Leadership determines what information is appropriate to share with employees, but the more detailed leaders are perceived to be, the more favorable employee perceptions are regarding the communication they receive. This considered, it is important that the detailed information be relevant or impact employees, rather than details regarding the thought processes or feelings of an individual leader, or specific details that do not have any impact on employees. This could be perceived as distracting instead of thorough (Burnes & Jackson, 2011; Muscalu, 2014).

**Ethics.** Second, ethical behavior, which is an employee’s perception regarding the fair treatment of employees, is an essential element to change implementation. Employees may disagree with the types of change taking place, but if they feel it is of an unethical nature, their disagreement can oftentimes lead to sabotage of the change implementation, lack of employee engagement, and much lower efficiency (Arbab Kash, 2014; Burnes & Jackson, 2011; Warrick, 2009). Whether or not the company is perceived to be ethical is related to successful outcome changes. Ethics can be characterized in three ways: how fairly employees feel they are treated by the organization, how fairly they feel they treat one another, and how fairly the organization treats the community or consumers it serves/impacts.

Organizational Ethics is the specific area in which employees evaluate how fairly they feel they are treated by their organization. This could include issues such as safety and employee welfare at minimum, an organization’s actions are expected to align with the mission/value
statement, to determine whether they are behaving in an ethical fashion (Arbab Kash, 2014; Burnes & Jackson, 2011; Eikenberry, 2014; Forck, 2014; Warrick, 2009).

Interpersonal Ethics refers to the perception of fairness employees believe exists between one another. This may include issues such as management’s decisions regarding promotion or pay, how interpersonal disputes are addressed, or even issues related to harassment/discrimination. All interpersonal relationships are considered in interpersonal Ethics, but most commonly the manager to employee relationship is what influences employee’s perception of fairness (Hughes, 2011; Kuokkanen, Leino-Kilpi, Katajisto, Heponiemi, Sinervo, & Elovainio, 2014). In general, if employees feel the organization supports an environment where employees must respect one another, such as enforcing rules of conduct, they are more likely to support an organizational change, regardless of how much money the company stands to gain from the change, or even if there is negative press related to the organization and its decision to make changes (Chernyak-Hai & Tziner, 2014; Hughes, 2011; Slocum, 2015).

Community Ethics, or employee perception of how fairly the organization treats the larger community or its consumers is the final aspect to ethical behavior that will be considered. Community or consumer ethical issues, which are issues a company may have poorly addressed and adversely impacted others, can include issues such as pollution, putting small family-owned shops out of business, quality standards, and/or bad publicity the organization may have received. Once again, the organization’s mission and values are often considered when employees evaluate whether or not behavior is ethical. Behavior that is not aligned with mission/value statement is more likely to be perceived more unethical than vague or no mission/value statement (Hughes, M., 2011; Kuokkanen, et al., 2014).
Follow Up. Third, Follow Up, for the scope of this study may take the form of “Debriefs,” “Lessons Learned,” or “Recapping” meetings at an organization. Employees are influenced by their perceptions of the past. There is a relationship between organizations that use Follow Up activities with employees on the outcomes of a change implementation, and success rate of change implementations (Harmon, et al., 2015; Prywes, 2011; Slocum, 2015). Employees do not have the ability to see the full impact a change initiative has had on an organization, unless leadership communicates the outcomes and value added, so following up with employees after a change event is crucial in making these connections.

For this study, debriefs will refer to a company summarizing all known data related to how successful a change implementation was, and how it relates to the intended goal, driven by facts and quantified measures. After undergoing the stressful and sometimes time-consuming efforts because of a change event, it is important for employees to feel their efforts and the change event has a positive outcome (Christensen, 2014; Critchley & Gibbs, 2012; Harmon, et al., 2015; Tziner & Tanami, 2013). Such positive outcomes could improve financial stability, customer service, and morale in the workplace. Letting employees know the measurable impact of a change is important, such as money saved, improved efficiency, or improved customer satisfaction scores, specific to the area that the change implementation sought to improve.

Lessons Learned is a summary of key milestones in the change implementation, with a qualitative feel, acknowledging some of the hardships the employees may have endured to implement the change. A lot of work is typically poured into preparing for a change, so if the employees feel neglected after the change has occurred, they may reflect on previous events and approach future change with far greater negativity, compared to when Lessons Learned are discussed (Prywes, 2011). Even if a change implementation or aspects to the implementation fail,
it is imperative that leadership acknowledge and discuss what can be learned. Without this component of follow-through, employees may lose trust in their leadership and may not feel their efforts and struggles in trying to make the change implementation a success were realized (Christensen, 2014; Critchley & Gibbs, 2012; Harmon, et al., 2015).

Explanation of the milestones to the change implementation and reminding employees why the implementation was necessary, or “Recapping” is necessary both immediately and long after the change implementation. Framing the change in a way that is relevant to employees, and reminds them of the previous state, will help maintain focus on the goal of the change. Being reminded of the issues sought to be addressed by a change initiative has been found to help employees keep the scope and purpose of the change initiative in mind, and therefore have increased implementation success rates (Christensen, 2014; Harmon, et al., 2015).

In conclusion, to evaluate how well an organizational change was carried out, three organizational factors can be evaluated: Open Culture, organizational Ethics, and Follow Up. These three factors have a known relationship to organizational change success (Christensen, 2014; Van de Ven & Sun, 2011). These three organizational factors have 11 specific components, referred to as sub-factors in this study.

The first organizational success factor, Open Culture, has two characteristics: relationships between leadership/management and staff, and good communication. Quality relationships have two distinctive components, which can be measured through organizational hierarchy and inclusion of employees in decision-making. Good communication can be measured by three components: frequency, trustworthiness, and thoroughness. Frequent communication is that which occurs throughout the change process. Trustworthy communication
is characterized by accuracy. Thorough communication is detailed enough to inform employees of all relevant information related to the change implementation (Armenakis, et al., 2011).

The second organizational success factor, Ethics, refers to how fairly employees perceive an organization treats others. Ethics can be measured in three components: employee treatment by organization (Organizational Ethics), Interpersonal Ethics, and Community Ethics. Organizational Ethics refers to how well they believe they are treated by the organization, including working conditions. Interpersonal Ethics refers to how well employees believe leadership and their colleagues treat them. Community Ethics refer to perceptions of how fairly the organization treats others outside the organization, which includes the community, environment, and consumers (Armenakis, et al., 2011; Oreg & Sverdlik, 2011).

The third organizational success factor, Follow Up, can be measured by three components: Debriefs, Lessons Learned, and Recapping. Debriefs summarize pertinent information throughout the change implementation process. Lessons Learned typically occurs towards the end of the change implementation, or the end of a phase of implementation, acknowledging hardships endured and what can be learned as a result. Recapping refers to explaining milestones occurs at the end of the change implementation, to summarize how successful the change appears to be and reiterating the importance of the change (Armenakis, et al., 2011).

**Psychological Capital**

Relatively less studied are individual factors related to organizational change success. This is most likely because organizations have little control over individual differences, and individual factors are perceived as too difficult to manage or change. Individuals have the
potential to influence the success of change implementations, which can be better understood when individual factors are evaluated and defined.

**Psychological Capital factors.** One newer construct is Psychological Capital or “PsyCap”. PsyCap should be related to successful organizational change events, since the individual constructs theoretically support successful organizational change factors. PsyCap has four distinct factors, can be developed, has a relationship to positive business outcomes, and theoretically believed to influence organizational change success factors, to be discussed further.

First, **Hope** has been defined as one’s general ambitious outlook towards current events and outcomes in the near future, maintaining the belief that improvement is possible for even the most difficult of situations (Harms & Luthans, 2012). Hope as an agency component has three conceptual foundations: agency, pathway, and goals (Luthans, et al., 2007, p. 5-6). Simply put, these three foundations refer to one’s positive orientation or worldview (agency), a means of identifying and facilitating positive outcomes (pathway), and fruition of an intended future state (goals).

Hope has been found to have a relationship to one’s health, academic success, and workplace success. It is theorized that because those with higher Hope take a more active role in seeking solutions to problems, they seek professional development opportunities and similar activities, which lead to greater success. While research on Hope and its relationship to the workplace is limited, studies thus far have found a relationship between Hope and employee success, where higher levels of Hope predicted more successful employees. Additional studies have found Hope to relate to positive workplace attitudes, job satisfaction, and commitment (Luthans, et al, 2007).
Better understanding how an employee’s level of Hope impacts their attitudes and contributions to work is essential in harnessing this agency component’s full potential. With Snyder and colleagues defining Hope as a “state-like,” it is believed to be a facet that can be developed (Luthans, et al, 2007). Therefore, development of Hope holds the potential to have numerous personal and professional ramifications for those who seek to develop it (Dawkins, et al., 2013; Peterson, et al., 2011).

Second, Efficacy describes those with confidence in their personal ability to positively influence events, and indicative of someone with an orientation towards an internal locus of control (Luthans, et al., 2008). Efficacy, used interchangeably in most PsyCap literature with “self-efficacy,” represents positive beliefs and has been applied to workplace settings in previous research. A comprehensive meta-analysis revealed self-efficacy has a strong positive relationship to work performance (Luthans, et al., 2007).

Efficacy best meets the inclusion criteria for PsyCap as a whole, since it is foundationally based on one’s positive beliefs and motivation, key aspects to one’s PsyCap. [Self] Efficacy has been researched for decades, with Albert Bandura noting it is a good predictor for motivation and action (Luthans, et al., 2007, p. 8). Efficacy as it relates to PsyCap is unique in that it is approached specifically as focusing on one task at a time within the workplace (Dawkins, et al., 2013; Luthans, et al., 2007; van Wyk, 2014).

Third, Resilience refers to one’s ability to withstand adversity and overcome rejection, all while maintaining a generally positive outlook (Peterson, et al., 2011; Luthans, et al., 2008). The foundational constructs of Resilience are the ability to positively copy and adapt, especially during challenging times. When applied to the workplace Resilience is sometimes referred to
one’s ability to “bounce back” from conflict, failure, uncertainty, or change (Luthans, et al., 2007; Luthans, Avey, Clapp-Smith, & Li, 2008).

Studied within a clinical setting, psychologists have found that those with high levels of Resilience have exceeded simply returning back to a homeostasis following adversity, but actually improved from their state preceding an adverse event. Further, a “positive momentum” was suggested by research, noting that one’s Resilience tends to grow with each adverse event one “bounces back” from (Luthans, et al., 2007; van Wyk, 2014). Such positive momentum not only suggests the value of Resilience, but also supports the theoretical belief that resiliency can be developed and improved over time (Luthans, et al., 2007).

In the workplace Resilience has not been studied widely. Existing research on resiliency in the workplace has found increased employee morale and performance through a workplace adversity (e.g. downsizing) compared to employees with lower Resilience. Further research on the application of Resilience to the workplace would be valuable in identifying the impact Resilience could have on organizations. Of particular need could be within organizations undergoing change, which oftentimes is seen as a challenging or adversity laden time for employees (Luthans, et al., 2007). Resilience development could not only benefit organizations, but individuals as well, leading to a stronger organizational and individual success factors (Burnes & Jackson, 2011; Smollan & Sayers, 2009).

Fourth, Optimism is an overarching hallmark of PsyCap, and refers to a general outlook that the goals one has are achievable. Optimism also facilitates one’s general demeanor throughout the other facets of PsyCap towards a positive orientation regardless of difficulties one faces (Peterson, et al., 2011; Zhang & Shaw, 2012). Optimism was drawn from Seligman’s Attribution Theory where “optimists” were defined as those who make internal, stable
attributions regarding positive events, while also being realistic on what is possible (Luthans, et al., 2007).

A realistic sense of what is possible, being motivated to approach issues, and have a positive outcome are not just practically useful, but research suggests this orientation has numerous organizational benefits. Though limited research exists on Optimism’s application to the workplace, the present literature suggests that realistic Optimism not only encourages positive workplace behaviors, but also safeguards against the pitfalls of unrealistic expectations. Optimism that is unrealistic can lead to inefficiency when one exerts effort in failing endeavors, or disappointment when impractical goals are unmet (Luthans, et al., 2007).

These four factors are higher order constructs, which means that research has found they are more powerful in predicting useful organization outcomes together, than they are separately (Harms & Luthans, 2012; Meyers, van Woerkom, de Reuver, Bakk, & Oberski, 2015). The strength that has been found by evaluating all four constructs together has allowed PsyCap to be a powerful predictor of important business outcomes. Through looking at Hope, Efficacy, Resilience, and Optimism, one’s composite PsyCap score can be identified, providing a framework for where one currently has strength or areas of opportunity for personal development.

PsyCap development. The second distinct characteristic of PsyCap is its ability to be developed. The originators of PsyCap assert that PsyCap is state-like, which means an individual can develop their PsyCap, rather than having fixed and relatively unchanging scores (Peterson, et al., 2011). A training procedure and method of evaluating PsyCap already exists and has been validated (Peterson, et al., 2011). Because PsyCap can be increased on ground and online training platforms will be discussed.
PsyCap is state-like. State-like tendencies are more fluid, subject to change both over time, and during specific situations in short-term contexts. Fluctuation in one’s environment or activity may impact one’s state. One’s emotions are sometimes used synonymously with state, described by one’s feelings at a certain time such as fear during a horror movie, anxiety at a dentist appointment, etc. (Luthans, et al., 2008; Meyers, et al., 2015; van Wyk, 2014).

PsyCap is more enduring than mood or emotion, but not fixed like personality traits (Harms & Luthans, 2012). It is believed that PsyCap has a relationship to individual factors that promote change success, so development of PsyCap could increase change implementation success rates (Bin, Hongyu, Yongyu, Fuming, Feng, & Zongkui, 2014; Luthans, et al., 2007; Peterson, et al., 2011; van Wyk, 2014). State-like or changing tendencies mean that external events can cause a change, including but not limited to: training, organizational change, or a workplace event that affects one’s role within the organization (Luthans, et al., 2008).

In contrast with PsyCap’s state-like characteristics the converse, trait-like tendencies, are stable, and are considered enduring aspects to one’s personality (Luthans, et al., 2008; van Wyk, 2014). Traits are usually predictable responses an individual has to situations or events. For example, an individual may tend to be social within group settings. This is different than states in that there is consistency and predictability in one’s response to a situation (Luthans, et al., 2008; van Wyk, 2014). PsyCap is believed to fall on the state-like tendency part of the continuum, as PsyCap is subject to change and influence, rather than an enduring quality to one’s personality (Luthans, et al., 2008).

PsyCap training. The second characteristic of PsyCap is that it can be trained and improved. PsyCap training and measurement has been successfully applied to a variety of cultures and industries including teaching, healthcare, military, and factory work. A well-
established measurement of PsyCap, the Psychological Capital Questionnaire, has demonstrated training can improve PsyCap scores. Training and assessment can be proctored on-ground or online, to be discussed (Peterson, et al., 2011; Luthans, et al., 2008).

PsyCap training sometimes referred to as a PsyCap “intervention” can take a variety of forms in terms of duration and formality. Participants are trained with the intention of increasing one’s awareness and to better understand the concepts of PsyCap. Through a meta-analysis of PsyCap interventions, all had consisted of these foundational components: a trained facilitator, at least one class, materials the attendees can reference for further learning, and assessment of PsyCap using a survey (Luthans, et al., 2008; Toor & Ofori, 2010). PsyCap training has been found to be effective by measuring the PsyCap score of participants prior to training and after training, with PsyCap scores having a significant increase (Luthans, et al., 2007; Peterson, et. al., 2011; Roche, Haar, & Luthans, 2014). Participant’s PsyCap was measured with the Psychological Capital Questionnaire (PCQ), which has been found to be a good measure PsyCap scores, to be discussed further (Luthans, et al., 2007).

A completely online PsyCap training and evaluation format exists. PsyCap training and measurement adapted to an exclusively online format has been found to yield comparable results in terms of effectiveness, reliability, and validity, to on ground PsyCap interventions (Luthans, et al., 2008). The online format promises more convenience for participants, as it is self-paced rather than restricting to in-person classroom setting meetings.

The exact format of online PsyCap training and development may vary in terms of length and detail, but a comprehensive meta-analysis evaluating many online PsyCap trainings identified several common characteristics (Luthans, et al., 2008). All online PsyCap trainings had a self-evaluation completing a survey measuring one’s PsyCap, and coursework that taught
participants fundamental information about PsyCap. Online training sometimes included a pre-post survey format for researchers to evaluate the effectiveness of online PsyCap training, where effectiveness is indicated by a significant increase in one’s PsyCap score following training.

In summary, development of PsyCap through training has been empirically supported both with on ground and online formats. The state-like quality of PsyCap makes understanding a potential relationship to organizational change success especially useful, since such a relationship should mean that development of PsyCap would lead to increased organizational change implementation success. It is currently unknown the rate at which PsyCap development extinguishes, and this is likely impacted by a variety of personal and environmental factors that cannot be controlled for (Luthans, et al., 2008). Despite the duration of influence that PsyCap training has on behavior being presently unknown, the impact of PsyCap interventions is believed to be significant enough to justify continued research and implementation (Avey, et al., 2010; Luthans, Youssef, Sweetman, & Harms, 2013; Luthans, 2002b).

*PsyCap theoretical significance.* The third distinct characteristic of PsyCap is its known influence on positive business outcomes that are believed to be theoretically and practically related to individuals better navigating organizational change. First, individual factors of PsyCap have varying relationships to positive business outcomes, with some factors more closely related to specific positive business outcomes than others (Dawkins, Martin, Scott, & Sanderson 2013). Second, studies have found PsyCap as a whole has a more powerful relationship to positive business outcomes than when looking at one PsyCap construct individually in relation to positive business outcomes, to be discussed (Dawkins, et al., 2013; Fuchs & Edwards, 2012). These two characteristics together promise that PsyCap should have a positive impact on organizational change events.
Those with high levels of Hope, one of the four factors of PsyCap, have been found to have a more ambitious and positive outlook on their workplace, than those with lower levels of Hope. Further, they more often offer suggestions on how to solve problems or improve workplace conditions, compared to those with low levels of Hope. Studies have found Hope to relate to positive workplace attitudes, job satisfaction, and commitment, all of which promote important business outcomes (Harter, Schmidt, Killham, & Asplund, 2015; Luthans, Avolio, & Avey, 2007; Meyers, et al., 2015).

Efficacy, the second of PsyCap’s factors, aligns with one’s internal locus of control and feeling of competence. Perhaps the most researched of all four PsyCap constructs, Efficacy or “self-Efficacy”, has been shown to be related to one’s motivation and taking initiative (Luthans, et al., 2008). Efficacy has been shown to promote important business outcomes, most notably driving high levels of productivity and quality compared to employees with lower levels of Efficacy (Harter, et al., 2015; Luthans, et al., 2007).

Resilience, the third of PsyCap’s four factors, evaluates one’s ability to withstand adversity. Several studies theorize this factor is the most closely related to an employee’s perception of organizational change events, where one with high levels of resiliency are predicted to better adapt to organizational change than those with low levels of resiliency. Resilience is related to important business outcomes such as lower turnover, and higher employee morale especially during organizational change (Harter, et al., 2015; Luthans, et al., 2008; Luthans, et al., 2008).

Optimism, the fourth PsyCap factor, speaks to a general sense of Optimism in perception of one’s self and environment, including one’s workplace. Research suggests that Optimism is related to important business outcomes due to its influence on one’s outlook and impact on
behavior (Harter, et al., 2015; Luthans, et al., 2008; Luthans, et al., 2008). Though there is not currently data demonstrating the significance Optimism has on positive business outcomes, logically it would make sense that Optimism plays a critical role in the individual factors that drive an organization’s engagement and morale.

Though specific components of PsyCap have varying relationships to specific positive business outcomes, PsyCap as a whole construct has the most powerful relationship to positive business outcomes (Luthans, 2002b). These positive business outcomes should be related to individuals successfully navigating organization change events, making PsyCap an attractive measure of individual drivers of successful organizational change (Luthans, et al., 2008; Fuchs, & Edwards, 2012; van Wyk, 2014). State-like individual characteristics such as one’s PsyCap, promises to have an influence on organizational factors related to successful organizational change, since they related to one’s proclivity towards positively impacting the environment around them (Luthans, et al., 2010).

The individual factors of PsyCap: Hope, Efficacy, Resilience, and Optimism, have been shown to theoretically relate to successful organizational change. PsyCap as a whole is related to positive business outcomes. Logically these positive business outcomes relate to successful organizational change. In addition, it could be that PsyCap has a relationship to organizational success factors of Open Culture, Ethics, and Follow Up, where these individual characteristics indicate an employee more likely to participate in organizational factors that drive change success. Based on what is currently known about the relationship between PsyCap and positive business outcomes, it is believed that PsyCap will have a greater influence on one’s perception of organizational change success, than other factors such as organizational factors or one’s engagement.
In conclusion, individuals can be evaluated by using PsyCap, a four factor construct that is state-like, supports positive business outcomes, and believed to influence known organizational change success factors. The four factors of PsyCap are as follows: Hope, is characterized by one’s general ambitious outlook towards current events and outcomes. Efficacy is one’s ability to positively influence events. Resilience is characterized by one’s ability to withstand adversity. Lastly, Optimism is one’s enduring belief one’s goals are achievable.

PsyCap is state-like, which means it can be trained and developed. Training has been validated across industries and yielded significant results in both on-ground and online settings. Training is characterized by assessing participants using the PCQ, providing information on PsyCap, its components, and how one can improve their PsyCap. Studies have validated the influence of PsyCap training by conducting numerous pre and post- test evaluations during training, to measure the extent to which one’s PsyCap changes. Studies demonstrate increased PsyCap scores as a result of training (Luthans, et al., 2008).

PsyCap overall has been shown to support positive business outcomes, where higher PsyCap is related to higher morale, satisfaction, productivity, engagement, problem solving, and reduced turnover (Luthans, et al., 2008). Hope has been found to have a relationship to problem solving, while Efficacy promotes productivity and quality. Resilience is believed to influence turnover and morale (Luthans, et al., 2008). Optimism is logically believed to influence engagement and morale, though there is no research measuring this relationship. While each factor of PsyCap has a different relationship to these positive business outcomes, PsyCap as a whole has the strongest relationship to positive business outcomes, compared to the relationship between a single construct of PsyCap and positive business outcomes (Dawkins, et al., 2013).
PsyCap is an attractive measure of individual factors theoretically believed to influence organizational change implementation success. This theoretical significance is based on understanding of known organizational success factors, known influence PsyCap has on positive business outcomes, and empirical evidence that PsyCap can be developed (Toor & Ofori, 2010). PsyCap promises the opportunity to identify a relationship to organizational success factors, and if successful, train employees to better support change initiatives (Dawkins, et al., 2013).

**Employee Engagement**

Employee Engagement is a well-researched outcome variable and is an important outcome for an organizational change events. Employee Engagement, sometimes called “Work Engagement” is a persistent, enthusiastic work-related state of mind (Beitler, 2006; Church, 2013). The term was first coined and defined by William Kahn in 1990 as a theory in organizational management, and has become one of the most widely researched and developed topics in relation to individuals in the workplace (Kahn, 1990; Schultz & Schultz, 2008). There remains debate in the industry on specific aspects of engagement, including which theoretical model is most accurate, what components define engagement, and how engagement is measured, will be discussed.

**Employee Engagement Theoretical Models**

Numerous theories and models of engagement exist. Those with the most relevance to organizational change will be discussed. Two overarching theoretical models explaining engagement evident from the literature review were: the theory that engagement exists at various levels, and the theory that engagement is on a continuum. Relevancy of the two theoretical models to this research will then be explored and aligned to organizational change, as well as their method of measurement, discussed below.
**Engagement exists at varying levels.** The first predominant theoretical model of engagement is defined by the assertion that engagement exists at various levels, and can be absent, rather than opposing extremes, with trait like and state like tendencies. The engagement research of William Kahn, and Macey & Schneider, align to this interpretation. Kahn defines engagement as “*The harnessing of organization members' selves to their work roles...*” and pioneered the approach to engagement as an individual characteristic that is present to varying degrees (Kahn, 1990). Macey & Schneider published a foundational study to understanding employee engagement in 2008, with the intent to define engagement in universally applicable terms (Macey & Schneider, 2008; Maslach, Jackson, & Leiter, 1997). This work further developed the existence of engagement in various levels or types, rather than a diametric approach to engagement.

Macey and Schneider (2008) describe employee engagement as “*A desirable condition that has an organizational purpose...*” (Bakker & Leiter, 2010; p. 20). In Macey and Schneider’s (2008) study, three distinct ways engagement can manifest were defined. These three engagement types: psychological engagement, trait engagement, and behavioral engagement, help refine the broad concept of engagement, to be discussed.

First, psychological engagement is described as a psychological state, or a changing, possibly temporary level of engagement. The research suggests that numerous variables can cause one’s engagement to fluctuate to some extent, meaning that engagement can change. Such variables may include change in one’s role, workload, interpersonal relationships, and personal issues that may impact an employee’s mood (Macey & Schneider, 2008; Schultz & Schultz, 2008).
Second, trait engagement refers to individual traits that are believed to facilitate engagement, causing the engagement to be stable and enduring. Comparable to a personality trait that is relatively predictable and withstanding for an individual, trait engagement remains consistent for individuals across time. Limited longitudinal studies suggested employees have mostly consistent engagement levels, theorized to be related to their personality traits. However, the sample size of these studies was small, and results were not consistent, pointing to engagement being more state-like in nature (Maslach, et al., 1997; Schultz & Schultz, 2008).

Third, behavioral engagement refers to observable behavior that is believed to indicate engagement in one’s work. While the previous two conceptualizations of engagement rely on individuals to self-report their sentiments, and survey results determine their engagement, behavioral engagement can be evaluated quantitatively or qualitatively by others. To evaluate behavioral engagement quantitatively, one can use performance metrics measuring one’s delivery of their expected duties. To measure behavioral engagement qualitatively, a trained observer can evaluate defined engagement behaviors in the workplace and rate employees on these criteria (Bakker & Leiter, 2010). The criticism with behavioral engagement is the focus on outcomes instead of employees’ emotional state, however being one of the three types of engagement offered by Macey & Schneider’s work, it is important to consider when explaining engagement.

Schaufeli’s meta-analysis on employee engagement notes that employee engagement is a major topic for human resources professionals, leaders, and managers, causing nearly all consultancy firms whom serve these populations to develop their own means of describing and assessing engagement (Salanova & Schaufeli, 2008; Sinclair, Wang, & Tetrick, 2012; Oreg & Sverdlik, 2011). Though all imply or explicitly state that their measurement of engagement has a
relationship to positive business outcomes including increased morale, productivity, profitability, satisfaction, and employee retention, only Gallup has offered peer-reviewed empirical evidence of such a connection. For this reason, Gallup’s measurement of employee engagement is important to consider when evaluating a relationship between employee engagement and positive business outcomes, to be discussed (Sinclair, et al., 2012, p.139).

Gallup’s Q12 has the most research and peer-reviewed empirical evidence demonstrating a relationship between engagement scores and business outcomes, and aligns with the theory that employee is present at different levels (Harter & Gallagher, 2015). The Q12 is named for its 12 actionable workplace elements, believed to collectively identify one’s engagement level (Harter & Gallagher, 2015). Gallup has described employee engagement as “[an] individual’s involvement and satisfaction with as well as enthusiasm for work” (Harter, Schmidt, & Hayes, 2002). Gallup is considered to be the first in the survey industry to evaluate which elements influence employees to perform at their maximum potential, decades before the term “employee engagement” was formally introduced (Harter, et al., 2015; Waltuck, 2012).

The Q12 evaluates levels of one’s psychological or “state-like” engagement, determining if they are engaged or not, based on how their composite score compares to the average composite score of others in the industry, company, or profession (Harter, et al., 2015). Although some organizations will use the results of the Q12 to categorize an employee’s level of engagement into more specific parameters such as “Partially Engaged”, “Disengaged”, or “Highly Engaged”, there is not a universally accepted definition of these levels, nor is there empirical support of what the cut-off score should be on the Q12 to assign someone to any particular level (Heyne & Gallagher, 2015).
A grand mean score is used to determine one’s engagement using the Q12, which Gallup reports has been correlated to productivity ($r=0.89$), turnover ($r=0.87$), and customer satisfaction ($r=0.87$) (Harter, et al., 2015). The grand mean score is then used to determine one’s level of engagement, oftentimes compared to national averages, or average engagement scores within one’s own organization, to determine if engagement is above or below said benchmark. Those above the benchmark are oftentimes considered ‘engaged’ and those below are oftentimes considered ‘disengaged’, though some organizations set specific standards on how much above or below average constitutes one’s engagement level (Sinclair, et al., 2012). Gallup also reports that the total instrument has a Chronbach’s alpha of 0.91 at the work-unit level, and each item correlates to their broader factor true-score values on average $r=0.69$ (Harter, et al., 2015, p.13-14).

The theory of engagement existing at different levels has provided foundational knowledge to the importance of individual contributions in the workplace, but lacks universally accepted definitions explaining engagement, as is the case with Gallup’s theory of engagement. While the Q12 has powerful empirical results linking its engagement composite to business outcomes, it lacks a clear definition of engagement levels based on the grand mean score and is not available for public use. A clear understanding of how engagement is defined and ability to measure engagement is crucial to this study and is addressed under the second overarching theory of employee engagement, discussed next.

**Engagement on a continuum.** The second predominant theoretical description of engagement is the belief that employee engagement falls on a continuum, where burnout is the one, maladaptive extreme, and high engagement is at the opposite end of the continuum. A diametrical model that originated from this theory is associated with Maslach, Jackson, and
Leiter’s work in the late 1990s through early 2000s. This model assumes that one must be assessed for not only engagement, but it’s opposite, burnout, as well. As a result, the Maslach Burnout Inventory (MBI) originated as an assessment to identify one’s level of engagement and burnout by asking individuals to rate various aspects of their work-life environment (Maslach, Jackson, & Leiter, 1997; Schultz & Schultz, 2008).

This model is beneficial since it has resulted in copious studies investigating engagement and building on what’s known about employee engagement, however this terse, diametric approach has been largely abandoned in the evaluation of engagement. Further research prompted by Maslach and colleagues’ work, has a focus on behavioral components, which led to meaningful studies linking one’s MBI results to their perception of their workload and workplace (Maslach, Jackson, & Leiter, 1997). The MBI has been adapted into a different assessment to better measure engagement under the Utrecht theory of engagement, and the concept of employee engagement as well as its’ components are well-defined by this theoretical model, to be discussed (Fletcher, et al., 2014; Maslach, Jackson, & Leiter, 1997).

Founded on existing research that posits engagement exists on a continuum, Utrecht moved to have engagement defined and measured only focusing on the positive aspects and no longer measuring the antithesis components of engagement (burnout), to make the concept of engagement easier to understand and measure (Sinclair, et al., 2012). The Utrecht definition of engagement is “Positive, fulfilling, work related state of mind…” (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Prominent research under the Utrecht theoretical model asserts that engagement can be defined by three distinct components: Vigor, Dedication, and Absorption (Maslach, Jackson, & Leiter, 1997; Schultz & Schultz, 2008).
Vigor is considered the level of effort one puts forth in one’s work. Vigor can be evaluated including but not limited to the following workplace behaviors: going above and beyond one’s job description willingly, volunteering to take on more work, and generating a large quantity of high-quality work (Alonso & Mo, 2014; Harter, et al., 2015; Schaufeli, et al., 2002). It is important to evaluate Vigor as one of three components that collectively define employee engagement, rather than independently, since it can indicate an unhealthy attachment to one’s work. At its maladaptive extreme, very high levels of Vigor can indicate one’s self-worth is tied to the work they do, and they do not have a healthy balance in their lives between time at work and time outside of work (Tziner & Tanami, 2013).

Dedication is most commonly defined within the scope of employee engagement as one’s commitment level to their organization (Tziner & Tanami, 2013). Further supporting the importance of a multifaceted approach to understanding employee engagement, it is important not to consider this factor by itself in determining employee engagement, since sometimes organizational commitment behaviors are due to an employee’s perception of a lack of alternative career options, low tolerance of change, or complacency: none of which contribute to one’s performance or contribution to their organization (Alonso & Mo, 2014; Frock, 2014; Rusu, 2013b). Research has further indicated that those with followership personality types (those who prefer to take orders rather than delegate orders) typically have a stronger organizational commitment on a long-term basis compared to those without a followership personality (Gatti, Cortese, Tartari, & Ghislieri, 2014).

Absorption is defined as personal attachment and efficiency in one’s work, as well as having genuine interest in one’s tasks (Gatti, 2014; Schaufeli, et al., 2002). Some argue that Absorption is not distinct from another employee-state called flow or flow-state, in terms of
exclusive validity, but is accepted to be a statistically sound and rigorous component of employee engagement. Absorption is more difficult to observe than Vigor or Dedication, since it has a more personal, psychological quality rather than observable behaviors.

The three aforementioned components of employee engagement have been validated and thoroughly researched (Salanova & Schaufeli, 2008; Luthans, 2002b). The components are used to evaluate whether or not someone is engaged, determined by measurement on self-report surveys. The Utrecht model of engagement also has a measure, which aligns to their specific definition of employee engagement, to be discussed.

The Utrecht Work Engagement Scale, or “UWES” measure of engagement is widely considered the standard for explaining and measuring employee engagement, since it’s advent in the early 2000s (Harter, Schmidt, & Hayes, 2002; Schaufeli, et al., 2002). The UWES aligns very well with this study as it clearly defines the components of employee engagement: Vigor, Dedication, and Absorption. The measure the UWES was based upon, the MBI, assumed each component of engagement had a scale from its opposite (exhaustion, cynicism, and reduced professional efficacy). However, Schaufeli and Bakker modified this approach under the Utrecht theory for two reasons. In part due to an industry-wide movement towards positive psychology, which evaluates the positive aspects of employees’ psychological states, and secondly due the methodological concern that the components of engagement and burnout are likely not perfectly negatively correlated (Bakker & Demerouti, 2008; Fletcher, et al., 2014; Schaufeli & Bakker, 2003).

The UWES was initially developed with 24 items, using eight items rephrased from the MBI assessment. Results indicated some of these items to be unsound statistically, and the survey was shorted to 17 items (Harter, Schmidt, & Hayes, 2002; Schaufeli, et al., 2002). Six
items are used to assess one’s Absorption, six items to assess Vigor, and five items to assess one’s Dedication in this full UWES survey format. More recently studies found shortening the survey to include nine items called the UWES-9, three items for each component of engagement, was just as powerful in assessing one’s engagement as the 17-item model (Salanova & Schaufeli, 2008).

Utrecht’s UWES is the most well-versed academic measurement of employee engagement that is available to the public, provided its use is in a research (e.g. non-commercial) capacity. In addition to its reliability, the UWES has also demonstrated high internal consistency, with a Cronbach’s alpha of all three scales in the original and UWES-9 exceeding .80, and exceeds .90 as a total composite score (Sinclair, 2012, p. 144). Since the UWES is founded on the theory and definition of engagement this study most closely aligns with; employee engagement exists on a continuum, it is an especially appropriate measurement to evaluate engagement.

The UWES has a strong association with the Q12, with this convergent validity, furthering its use as an attractive measure of employee engagement for this study (Salanova & Schaufeli, 2008; Sinclair, et al., 2012). Schaufeli goes on to state the UWES is expected to link to business outcomes (Harter, et al., 2015; Schaufeli & Bakker, 2003). This research is important because it suggests that the UWES theoretically and practically has a relationship to positive business outcomes, which was the most desirable attribute of Gallup’s Q12.

**Engagement and Related to Organizational Change**

Well-executed organizational change can be evaluated at the individual level by measuring employee engagement. Employee engagement levels that are the same or better in all three constructs: Vigor, Dedication, and Absorption, following an organizational change, than
prior to the organizational change, suggests a well-executed change. A poorly executed organizational change is expected to have a negative impact on one or more components of employee engagement, leading to lower engagement scores (Harter, Schmidt, & Hayes, 2002; Salanova & Schaufeli, 2008; Oreg, & Sverdlik, 2011). Engagement is an attractive outcome variable to consider for this study due to its thorough evaluation, broad application, and its relationship positive business outcomes used to evaluate the success of change implementation success.

First, engagement has been researched and evaluated since the early 1990s, with several assessments available that have been validated and reliably demonstrate one’s engagement levels. Engagement is a construct that has been accepted as a reliable measure of employee contributions across industries (Harter, et al., 2015; Wefald & Downey, 2009). Gallup and Utrecht have validated employee engagement and ensure it is also a statistically sound and meaningful measure exists for evaluating engagement (Bakker & Demerouti, 2008; Harter, et al., 2015).

Second, part of engagement’s rigorous evaluation has been the application to the workforce in a variety of industries, organizations of all sizes, and diverse participants, with consistent demonstration of an individual’s impact on their workplace (Peterson, et al., 2012; Waltuck, 2012). Both Gallup and Utrecht’s engagement models and assessments are available in over 20 languages and are validated annually using participants from all over the world (Bakker & Demerouti, 2008). These measures have secured the concept of engagement as a universally applicable and representative measure (Harter, et al., 2015; Schaufeli, et al., 2002).

Third, components of engagement have been found to have a positive influence on some organization change success factors, where increased engagement levels lead to increased
positive business outcomes. Meta-analyses conducted by Bakker, Harter, and Schaufeli are among the most comprehensive examples, all suggesting a relationship between engagement components (Vigor, Absorption, and Dedication) and organizational change success factors: culture and ethical behavior (Bakker & Demerouti, 2008; Harter, et al., 2015; Schaufeli, et al., 2002). Therefore, employee engagement is a suitable outcome variable to measure organizational change success.

Employee engagement has historically been focused on implied profitability, by promising a link to positive business outcomes. This has resulted in numerous consulting agencies developing their own definitions of engagement, as well as measurement procedures. While engagement is a broad concept and has numerous theories and measures in the industry, the well-defined and well-researched model of engagement offered by Utrecht offers a concise understanding of the construct for this study. Utrecht’s UWES-9 assessment has been found to have convergent validity and strong association to the only known engagement assessment with an empirical link between employee engagement and positive business outcomes (Harter, et al., 2015; Rowlinson, Hassard, & Decker, 2014).

In conclusion, employee engagement promises to be an excellent measure of organizational change effectiveness for this study, where high levels of engagement could predict perception of an effective organizational change. Engagement has been defined and evaluated in many ways in the industry. Two overarching theories of engagement exist: engagement is present at various levels, and engagement exists on a continuum. First, the theory that engagement exists at various levels has been criticized due to a lack of a theoretically-linked assessments that have been made available to the public.
Those aligned with the first theoretical approach that engagement exists at different levels, such as Macey & Schneider, believe engagement can exist in different types: psychological or state-like engagement, trait-like or enduring engagement, and behavioral engagement (Bakker & Leiter, 2010). Psychological or state-like engagement is temporary and subject to change. Trait-like, enduring engagement is believed to align with one’s personality, and remains comparatively stable over time. Behavioral engagement is limited to observable behaviors that are considered indicative of one who is engaged (Bakker & Leiter, 2010; Macey & Schneider, 2008). The Gallup Q12 assessment aligns to the theory that engagement exists at various levels, and while it has empirical evidence linking engagement scores to business outcomes, it is a proprietary measure not available for public use.

The second overarching theory of engagement, that engagement falls on a continuum, has three distinct components defined by Utrecht’s model of engagement: Vigor, Dedication, and Absorption. Vigor is characterized by the effort one puts forth in one’s work, Dedication is defined by one’s commitment to their organization, and Absorption describes one’s genuine interest and attachment to their work (Harter, et al., 2015). This theory of engagement is celebrated for its well-defined constructs, definition of engagement, and alignment with Utrecht’s UWES measurement, which is considered the academic standard for evaluating employee engagement. The UWES is available for academic use, well-researched, and highly correlated with Gallup’s Q12, which has been shown to be related to positive business outcomes (Harter, et al., 2015).

By examining both individual level variables (PsyCap) and organizational level variables (Open Culture, Ethics, and Follow Up) together, more can be understood regarding what predicts success during organizational change, as measured by employee engagement. The design of this
study is to survey working participants who have recently experienced an organizational change event. Participants will be asked to rate how their organization did in terms of the three organizational level factors. They will also be asked to fill out a PsyCap survey and employee engagement survey.

With this information, we will be able to test how well PsyCap, Open Culture, Ethics, and Follow Up predict employee engagement. There is also the possibility to test whether PsyCap mediates Open Culture, Ethics, and Follow Up on employee engagement. This mediation would indicate PsyCap influences the relationship between organizational success factors and employee engagement.

**Conclusion of Chapter 2**

PsyCap is logically believed to influence known organizational change success factors: Open Culture, Ethics, and Follow Up. Individuals influence these organizational success factors, so PsyCap could have a direct and indirect impact on change success. Employee engagement is an outcome variable that has been correlated to positive business outcomes and can be used to assess how well an employee is navigating organizational change, as well as effectiveness of the change implementation. Assessing an individual’s PsyCap and employee engagement will contribute to the limited research on the relationship between PsyCap and engagement; it is expected that greater PsyCap will lead to higher engagement. Since PsyCap can be developed, understanding the relationship between PsyCap and engagement could lead to the ability to develop individual success factors that contribute to organizational change success.

Organization change studies indicate three primary success factors that promote change implementation success: Open Culture, Ethics, and Follow Up. Open Culture is characterized by relationships with management, and good communication. Ethics broadly refers to how fairly
employees believe they or others are treated, and characterized within this study as Organizational Ethics, Interpersonal Ethics, and Community Ethics. Follow Up is characterized by Debriefs, Lessons Learned, and reviewing key milestones. A gap in the literature exists in measuring individual’s influence on organizational success factors, which this research seeks to address by better understanding individual characteristics that promote organizational change success.

Relatively less studied are the individual factors related to organizational change success. One newer construct is PsyCap, a state-like construct, which is made up of four factors: Hope, Efficacy, Resilience, and Optimism. PsyCap can be trained and developed and is logically believed to be related to successful organizational change events. If this relationship exists, development of PsyCap could be the key to better preparing organizations for change, by leveraging individuals, rather than work-unit or system-level focus, which have had low success rates in change implementation. Researchers will examine if this relationship exists between change success factors and PsyCap within this study.

Employee engagement offers an empirically sound evaluation for how well an individual is navigating organizational change. Engagement is an outcome variable that has consistently demonstrated a relationship to other positive business outcomes: problem solving, productivity, quality, and morale. Research demonstrates that a relationship between engaged employees and organizational change success factors exists, so better understanding how to develop individual factors that drive engagement, could be valuable to organizations (Bakker & Demerouti, 2008; Harter, et al., 2015; Wefald, et al., 2012).

In summary, employee engagement could offer an empirically sound evaluation for how well an individual is navigating organizational change. Engagement is an outcome variable that
has consistently demonstrated an individual-level impact on positive business outcomes and is believed to influence organizational success factors: Open Culture, Ethics, and Follow Up. Research demonstrates that a relationship between engaged employees and greater organizational change success exists, so better understanding how to develop individual factors that drive engagement could be valuable to organizations.

By investigating a relationship between employee engagement and PsyCap scores to change implementation success rates, more can be understood about individual drivers of organizational success. This study may lead to statistically meaningful relationships, which could justify additional future research. Research in this area will ideally improve change implementation success rates, and employees’ quality of life at work during change events.
Chapter 3: Research Design and Method

Research Questions

Researchers in this study sought to understand what relationship may exist between Open Culture, Ethics, Follow Up, one’s PsyCap, and change implementation success, measured by employee engagement. Examining organizational level factors and individual level factors together may help understand what drives organizational change success. Additionally, there was a desire to understand if some individual PsyCap factors have a stronger relationship to change implementation success rates than others, as discussed below.

There were five research questions this study is intended to address. First, is to answer whether the Sager-Thompson Change Inventory (STCI) written and developed by the researchers of this study is an adequate measure of one’s perception of an organizational change event. A review of the literature and known assessments of organizational change success indicated a lack of a universal, validated, and reliable measure to evaluate an individual’s perception of how well their organization implemented a change. Development of the STCI is intended to provide a possible measure of organizational change success perception, in addition to offering organizational factors that help elucidate an individual’s perception about their employer. If the STCI is an adequate measure of organizational factors that are believed to influence change implementation, it could be used to evaluate and predict employee support of change implementations with their organization.

The remaining research questions align to the hypotheses of the study: is there a relationship between one’s PsyCap score and their employee engagement? Limited research suggests there is, and when investigating the potential for individual factors to impact an organization, employee engagement and PsyCap are excellent measures to further investigate. A
predictive relationship would suggest that PsyCap (individual factors) influence the Absorption, Dedication, and Vigor one has for the work they do.

The third research question is whether there is a predictive relationship between the STCI and employee engagement during an organizational change event? Understanding whether this relationship exists is helpful in identifying the influence organizational factors have on an individual’s employee engagement during a change event. The fourth research question is whether individual factors (PsyCap) influence engagement more than organizational factors during an organizational change? Understanding which has a stronger relationship to engagement during a change event could be useful in helping organizations to prioritize their efforts during change initiatives, providing either personal development or organizational level interventions to drive a successful change implementation.

The fifth research question is identifying whether the STCI is able to predict one’s organizational change success perception. This is ultimately the intention of the measure, in addition to measuring the organizational factors believed to promote change. Such a predictive relationship would support the STCI being future evaluated for use as a measure of organizational change success during or after a change event.

Population and Sample

This study surveyed employed participants who have at least two years of work experience, have been employed with their current employer and in their current role for six months or longer, and have experienced a large organizational change event within the past year with their current employer. The reason for these criteria are due to what is being measured in this study and trying to mitigate factors that may bias the responses and therefore hinder the
validity of this study. For example, a lack of work experience, a recent promotion or layoff by one’s most recent employer, etc. are believed to have a high risk of biasing the responses.

The sample size for this study was 139. The goal was to have a minimum of 100 participants to adequately measure all survey constructs. Ideally the sample size would meet or exceed 384. The implications of the sample size being less than half of what was desired, is having to view the study as exploratory in nature and interpret the results cautiously, discussed further within the Limitation section of Chapter 3 and 5.

The target sample size was derived by taking into consideration the statistical rigor desired to evaluate the STCI, and a representative sample of the population eligible to participate. For this study, the criteria are to reach a confidence level of 95%, a confidence interval of five, and intended to represent the United States workforce with two or more years of experience, six months or longer in their current role, and recently experiencing a change (estimated N=110,000,000) (http://data.bls.gov). Only 267 people attempted to complete the survey, and of those 202 passed the five eligibility screening items, with additional attrition once a minimum of 90% completion of each measure was applied, so interpretations are made cautiously due to the sample size attained.

A one-page recruitment flier and link to the online survey was shared across a variety of professional networks (including LinkedIn and Facebook). An incentive to participate was offered, giving participants the option to enter a raffle to win a $10.00 Starbucks’ Coffee gift card at the end of the survey, where eight winners were selected within 48 hours of the survey administration close (October 25th, 2017). The online survey was anonymous unless participants chose to enter the drawing, where they were then asked to provide their email address. The survey began with providing the participant four key pieces of information: the purpose of the
study, minimum requirements to participate, definitions of terminology that will be used, what to expect in terms of privacy and information asked on the survey, and the voluntary nature of the survey.

**Procedures**

Each participant was asked five screening items to ensure eligibility. If eligible, they were then asked five change evocation items, to ensure they have a change event in their mind while responded to the survey items, including their overall perception of how well their organization handled the change event, all of which are detailed in the Population section. Then, the survey directed participants to the 50 item STCI to evaluate organizational factors and change perception. The 50 STCI items were asked immediately following the participant’s recollection of a recent, large change event. The STCI items were randomized on the survey, not grouped by factor or sub-factor.

Next the PCQ-24 items were asked, and then the UWES-9 items. The survey ended by thanking respondents for their participation and providing the option to continue on to enter the Starbucks gift card raffle or end their survey participation. All components were within one online survey, which was accessed using the link provided in the recruitment fliers, and only required one-time participation.

Jargon that is not common language, such as “Psychological Capital” or “PsyCap” was not used, to avoid confusion from participants without an Industrial Psychology background. The email address of the researcher, Heather Sager, and Chair, Dr. Jennifer Thompson, as well as TCSPP IRB department’s contact information was provided to participants in the event they had questions, concerns, or want to see the results of the study once the study is complete. To the researchers’ knowledge, no participants researched out with any concerns, and several
participants reached out to confirm whether the organizational change event they experienced met the criteria to participate.

Definitions of key words and terms were provided to make sure specific words were understood by participants, and consistent with how the researchers are defining these terms. The least amount of words possible the researchers felt needed to be defined were provided, to reduce the risk of participants not reading the definitions and getting overwhelmed by the introduction to the survey. The definitions were as follows:

*Organizational Change Event*: A specific project, process, or occurrence, moving the organization from a present-state to an altered future-state. Examples include but are not limited to: company merger or acquisition, expansion, or reduction of force in your workplace, increased or decreased workload, change in leadership of the organization, change in the process, policies, mission, or goals at the organization, a change of software and/or job expectations that impacts your daily work.

*Debriefs*: Summaries of pertinent change implementation information, during or after the change occurred.

*Ethics*: How fairly one treats another.

*Leader*: Refers to the President, CEO, and/or Senior Leadership Team within your organization. If you are a leader in your organization, answer items that reference leaders with those you report to in mind. If you do not report to anyone do your best to evaluate yourself when responding to these items or skip the item.

*Lessons Learned*: Conducting a meeting where acknowledging and discussing the hardships the employees may have had as a result of a change occurs.
Manager: The individual you report directly to. If this person is also a Leader, please answer questions that use the term “Manager” with your relationship to them in mind. If you do not report to anyone you can skip this item.

Recapping meetings: Reminding employees why the change was necessary and summarizing part or all of the change event.

Steep Hierarchy: A power distance between management and employees, where employees are not encouraged to speak freely with those they report to.

The eight survey participants who were randomly selected as winners of the Starbucks gift card were contacted one day after the survey administration closed (October 25, 2017). They were emailed individually through the Starbucks email gift card service to protect confidentiality, and each received the same text in the subject and body of the message that accompanied the gift card. The message thanked them for their participation in the organizational change survey. All email addresses were then removed from the data file before any analysis took place.

Validity

A minimum of two years professional work experience with six months in one’s current role and having experienced a change event at their current employer within the last year were required of participants. Those not meeting these eligibility requirements were screened out of the survey. Further, a minimal item response rate is applied, where more than 10% of items with no response will result in the survey being removed from the analysis, to ensure the data is meaningful. Only well-researched, validated survey items were used to assess employee engagement and PsyCap (the UWES-9 and PCQ-24 respectively).

STCI items were written to evaluate organizational change factors and perception of change implementation success; these 50 items based on 11 factors, were established through
review of literature. The STCI items were reviewed for content validity by subject matter experts (SMEs) who were doctoral students in an academic setting, and SMEs with extensive organizational change consulting experience within a corporate setting, detailed within the Measures section below. Items on the PCQ-24 and the STCI were ordered according to measure, with the STCI measure first then PCQ-24, but the items within the factors and sub-factors of each measure were randomly ordered on the survey, as a counterbalance measure to reduce the possibility of item order influencing the constructs of the survey. The UWES-9 items were asked in the exact order in which they appeared from the publisher, which was stipulated as a condition to have permission to use the measure in this academic research.

Potential threats to validity in this study are a small sample size, self-report bias, and confounding factors. These threats were addressed by widely recruiting for participants online through social media, to get the largest sample size possible. Confounding factors were addressed by examining the data and measured constructs to evaluate whether a meaningful relationship exists between the clearly defined factors we are seeking to better understand: organizational change success factors (Organizational Culture, Ethics, and Follow Up), PsyCap, and employee engagement. However, it is possible there are confounding factors that were not accounted for, and accuracy of the self-reported data is assumed, discussed further in the Assumptions and Limitations sections.

Data Processing

The survey was administered using Survey Monkey, with the results collected at the end of the survey and downloaded into an Excel file. The email addresses were removed from the file prior to analysis, and it was then uploaded into SPSS for cleaning and analysis. All data cleaning and organization was done within SPSS to reduce opportunity for errors.
The researcher named each item to ensure it was properly analyzed quickly, and to reduce the possibility of errors, using a specific and consistent naming methodology. The naming convention used abbreviations to first indicate the measure (STCI, PCQ, or UWES) in capital letters, then an abbreviation in lower case letters for the factor, and then sub-factor the item belongs to, followed by the item number, and a lower case “r” at the very end if the item had been reverse-coded. For example, “STClocCfre5r”, would refer to the STCI measure, Open Culture factor, Communication-Frequent sub factor item 5, which was reverse scored. Naming which items were negatively coded allowed the researcher to be certain the correct items were being reverse coded, and to quickly identify these items in SPSS output to ensure the results and interpretation was accurate.

Assumptions

The first and largest assumption is the accuracy and honesty of all survey participants must be assumed and was not validated by identifiable information (i.e. verifying education, work experience, age, etc. by use of social media or any other means). Full anonymity was possible, unless the participant wished to reach out with any questions or concerns, provided a detailed comment to the open-ended item that asks one to describe their change event in three to six sentences, or if they participated in the drawing to win a Starbuck’s Coffee gift card for $10.00 and happened to provide an email address that contained part of their name. Full anonymity for the participant meant that ensuring all participants met the minimum requirements, beyond their self-reporting on screening items was not possible. Second, incentivizing participation by offering the opportunity to win a gift card may have resulted in participants not completing the survey items or carefully reading items and directions; it is assumed this was not be the case. Lastly, the third assumption in the data analysis was that a moderate or strong correlation between variables indicated a meaningful relationship, while
acknowledging that additional studies will be necessary before declaring the STCI an adequate means of assessing or predicting an individual’s perception of organizational change.

**Limitations**

A surprisingly large proportion, 54% (n=118), of participants who read and agreed to the eligibility requirements and proceeded to attempt to take the survey were immediately screened out when asked the eligibility criteria items, leading to more difficulty obtaining an adequate sample size than planned. This suggests most participants do not closely read the eligibility requirements listed in the recruitment advertisements and emphasizes the need for screening items to ensure participants meet desired criteria. There is a restriction of range that may prevent the results being generalizable to the population: most notably, due to the eligibility requirements those with less than two years work experience are not represented. Additionally, it is believed that a disproportionately large number of participants are from the greater Chicago area, work in a corporate healthcare industry setting, and hold a graduate degree, due to the recruitment procedure which relied on the researcher’s professional and personal network.

Small business owners, independent contractors, and other freelance workers who are susceptible to change within their client’s organizations were not considered eligible since the intention of this study seeks to better understand change within one organization’s environment. The sample size of this study was small, decreasing the power of the data analysis and confidence in the relationship between PsyCap, UWES-9, and the STCI. Potential for researcher bias exists, where the researcher’s interpretation of current literature could be inaccurate, leading the STCI to be less effective or perhaps not an ideal measure of organizational factors and change perception. Although subject matter experts were used to ensure items were measuring the intended factor/sub-factor, these experts may have their own biases, which could have impacted their input.
Participant bias is also possible, since the recruitment strategy largely sourced the researcher’s professional and personal network, and that sense of familiarity may have influenced their responses. The survey relies on self-report data only, which is subject to self-report bias, where participants may respond inaccurately for a variety of reasons, including wanting to preserve their self-image. Confounding factors that were not accounted for are a potential limitation. Lastly, the STCI was written by the researchers, and not previously validated through other studies, nor used alongside other measures of organizational change, so the potential for mono operational bias and not measuring what was intended to be measured exists. This makes it a working exploratory measure and not an industry accepted form of evaluating organizational change perceptions, with broader limitations discussed in Chapter 5.

**Ethical Assurances**

There was nearly no risk to participants of this study, with only a small potential for one to feel uncomfortable providing their opinion of their workplace and sentiments. Those invited to participate in the study were only asked to take one survey, from their personal computer, with multiple-choice response options to all but one survey item. Additionally, they were given the option to skip items if desired, to allow the most anonymity and comfort possible. All invitations to the survey emphasized the voluntary nature of the survey, the type of information that would be discussed and asked of them, expected time involved to complete the survey, and reminded them they may choose to cease participation in the survey at any time with no repercussions. The Institutional Review Board (IRB) approved the procedure, recruitment method, fliers for advertising the survey, informed consent page, and all survey items prior to the involvement or invitation of any participants.
To ensure confidentiality, data was collected by Survey Monkey, and exported into an Excel document. The only potentially identifiable information is if one chose to provide a very detailed comment on the one open-text item, or one’s email address, if they chose to provide it to enter a drawing for a Starbucks’s gift card. Any email information was immediately removed from the data file prior to analysis since it was only necessary for the random drawing for the gift card and contacting the winners, ensuring the Excel document being handled does not have any personal information. The data collected in the Excel file was only viewed by the researchers, and data was only used for analysis in SPSS for this study.

**Measures**

There were three measures used in the study: The Sager-Thompson Change Inventory (STCI), the Psychological Capital Questionnaire (PCQ-24), and the Utrecht Work Engagement Scale – Nine Item (UWES-9). The STCI was used to evaluate individual perception of an organizational change event, the PCQ-24 was used to evaluate one’s PsyCap, and the UWES-9 was used to evaluate employee engagement. The STCI had three factors, and a total of 11 sub-factors. The PQC-24 was evaluated using the total score containing all 24 items, and the UWES-9 was evaluated in this study using the total score which contains all nine items. On all three measures a higher score (closer to 6.00) indicates more PsyCap, engagement, or favorable perception of a change event.

**Change Evocation Items.** Five items at the beginning of the survey asked the participant to recall a specific, large, recent change event they experienced, in order to gain access to the survey. This was done to ensure all participants met the eligibility requirements and encouraged the participant to better recall the change event once they are asked additional questions on their perception of the effectiveness of the change. The items are as follows: “In three to six sentences, please describe the most recent and large change that has taken place in the past year at the
organization you currently work for” (an open text box for responses with no character limit was provided). The second change evocation item was: “Please select the year this change began from the dropdown tab” (the year options were 2013, 2014, 2015, 2016, and 2017).

The third item was “Please select the month this change began from the dropdown tabs” (all 12 months showing, with January = 1, February = 2, … December = 12). The fourth item stated, “Please select the type of change you feel best describes this change event” (response options were: (1) Technology, (2) Merger/Acquisition, (3) Process/Procedure, (4) Reporting Structure, (5) Job Expectations/Responsibilities, (6) Other – small text box for a short reply).

Change Success Item. This was the fifth change evocation item and used to evaluate overall perception of change. This item is: “Overall, I believe this change event was handled well by my organization”. The response options were: (1) strongly disagree (2) disagree (3) somewhat disagree (4) somewhat agree (5) agree (6) strongly agree). All response options were represented, with the most to least frequent responses as follows: Somewhat Agree (n=54, 32%), Agree (n=42, 25%), Somewhat Disagree (n=23, 13.7%), Strongly Disagree (n=20, 11.9%), Disagree (n=18, 10.7%), and Strongly Agree (n=11, 6.5%).

Sager-Thompson Change Inventory (STCI). The authors of this study constructed an instrument based on theory. The factors that increase the likelihood of a change implementation being successful when rated more positive are: Open Culture, Ethics, and Follow Up, and should have a predictive relationship to perception of organizational change success (Harrington & Voehl, 2015). There were three to five items written for each sub-factor, with 11 sub factors in total, modeled in Diagram 1. STCI items included: “I believe the communication I receive in my organization is accurate”, and “I feel my organization treats me fairly”; please find all STCI items and reliabilities within Table A1.
Every STCI item used the same response option scale: 1) strongly disagree 2) disagree 3) somewhat disagree 4) somewhat agree 5) agree 6) strongly agree, where a mean score was used to determine the favorability of each factor; a higher score indicates greater favorability. Some items were reverse scored (item numbers 5, 9, 30, 34, 37, and 40). A high level of reliability (closer to 1.00) suggests a meaningful similarity of the items, rather than respondents simply choosing the same response option for every item. This meaningful similarity or internal consistency is important, since it helps to evaluate how well the STCI measures each sub factor.

Development of the STCI was based on supporting literature which had been previously untested. Each of the three factors are comprised of sub-factors, which are used to both define and provide precise evaluation of each factor, described below. Once items were developed to measure each sub factor, the measure was evaluated for content validity through use of subject matter experts, who confirmed how they believed written items should be categorized and phrased. Items were randomized before being shown to the subject matter experts.

The SMEs consisted of eight Doctorate Degree students in an Industrial Organizational Psychology degree program as part of their Organizational Design class at The Chicago School of Professional Psychology, and 15 organizational consultants, each with a minimum of five years’ experience advising clients through organizational change. The students were voluntary participants who belong to a class instructed by a committee member, and the consultants were willing participants who work with one of the researchers of this study and completed their evaluation of the measure independently and outside of working hours.

While most of the students had concerns about discriminant validity between “Debriefs” and “Recapping,” sub factors that are under the “Follow Up” factor, the consultants did not share this concern. Two of the consultants suggested there be no negatively phrased (reverse scored)
items for ease of completion by participants, however this adjustment was not made due to the potential loss of reliability and validity measures (the potential benefits did not outweigh the cost in data analysis potential). Lastly, half the consultants provided suggestions on re-phrasing five of the same items, to make them easier to understand assuming a ninth-grade reading level of survey participants. Their suggestions were reflected in the STCI and include edits such as using the word “lacked” instead of “omitted”.

**Open Culture.** This organizational factor is characterized by relationships between leaders and good communication, which is broken down into five sub factors: relationships between leaders/managers and employees, hierarchy structure, frequent communication, trustworthy communication, and thorough communication. The relationship to managers and leadership can be evaluated by the organization’s hierarchy, where a flat hierarchy is believed to indicate an open relationship. Good communication has several characteristics: it is frequent, trustworthy, and thorough. Frequent communication occurs throughout the change event, trustworthy communication is believed to be accurate and forthcoming, and thorough communication describes all relevant information without omission.

The internal reliability for Open Culture was $\alpha = .93$. Sample items include “New ideas are encouraged in my organization,” and “At the time I received it, I believed the communication around the change initiative to be true.” A total of 20 items comprised this factor.

**Ethics.** This organizational factor refers to how fairly others are treated. Review of relevant literature suggests ethics that influence an employee’s perception of their organization can take three forms: organization ethics, interpersonal ethics, and community ethics. Organization ethics refers to how fairly an employee feels the organization treats them. Interpersonal Ethics refers to how fairly employees believe they treat one another, which can
include peers or management. Community ethics refers to how fairly employees believe their organization treats others outside the organization, which can include customers, the community, or the environment (Ogunbami & Bola-Udegbe, 2014). The reliability was $\alpha = .93$ and included the following items: “I feel my organization treats me fairly,” and “I believe my organization treats the community fairly.”

**Follow Up.** This organization factor is characterized by Debriefs, Follow Up, and Lessons Learned. Debriefs encompass the organization making an effort to summarize key events during the change. Follow Up is similar but is distinct in that it refers to strategically timed summations during the change event that are planned and more formal, reiterating the big-picture of why the change is necessary. Lessons Learned are typically meetings held following the change implementation where hardships of the change are acknowledged, and strategies to mitigate or prevent future occurrences are discussed (Titrek, et al., 2014). The reliability was $\alpha = .94$ and include the following items: “I know how the recent change event ended – successful, unsuccessful or somewhere in between,” and “Learning opportunities from the change were discussed.”

**Psychological Capital.** Psychological Capital or “PsyCap” has four distinct factors, can be developed, and has a relationship to positive business outcomes. The four factors are: Hope, Efficacy, Resilience, and Optimism. Hope refers to one’s general ambitious outlook towards the events and outcomes in one’s life. Efficacy refers to one’s ability to positively influence events in their lives. Resilience is characterized by one’s ability to withstand adversity, and Optimism is characterized by one’s enduring belief that one’s goals are achievable (Luthans, et al., 2007).

The Psychological Capital Questionnaire (PCQ) has been thoroughly tested and shown to measure all four constructs to PsyCap (Luthans, et al., 2007). There are 24 items with Likert
Scale response options: (1) strongly disagree (2) disagree (3) somewhat disagree (4) somewhat agree (5) agree (6) strongly agree. The scores were then averaged to create an overall PsyCap score. The higher the score (closer to 6.00 overall score), the higher one’s Psychological Capital (Luthans, et al., 2007).

Within this study, there was with a Cronbach’s alpha of .90. The researchers found a .78 for the Efficacy factor, .81 for the Optimism factor, .81 for the Hope factor, and .66 for the Resilience factor. This suggests a moderate reliability for Efficacy and Optimism, moderately high reliability for Hope, and low reliability for Resilience factors.

The PCQ contains three items with a negative sentiment for reverse scoring, items 3, 6, and 12, where a “strongly agree” response is the most unfavorable response, and “strongly disagree” is the most favorable, to mitigate extreme response or acquiescence bias (Luthans, Avey, Clapp-Smith, & Li, 2008). Sample items include: “I believe that all the problems occurring at work always have a bright side” and “At the present time, I am energetically pursuing my work goals.” Please see Table A3 within Appendix for exemplar items within this measure (Luthans, et al., 2007).

Employee Engagement. The Utrecht Work Engagement Scale, or “UWES” measure of engagement is widely considered the standard for measuring employee engagement, the dependent variable for this study (Schaufeli, et al., 2002). The UWES defines employee engagement with three components: Vigor, Dedication, and Absorption.

The UWES-9 assessment has nine items, which have Likert Scale response options ranging from a 0 (Never) to 6 (Always). The averages of three items used to measure each component of employee engagement are used to calculate the total mean score. Sample items include: “My job inspires me” and “I am immersed in my job.” Please see Table A2 within
Appendix for additional exemplar items within this measure (Schaufeli, et al., 2002). In this study, the UWES-9 composite score had a Cronbach’s alpha of .92, and all three factors had moderately to high reliability. Vigor had a reliability of .87, Absorption .71, and Dedication .87.

**Analysis**

Survey Monkey was used to collect the survey results, allowing for participant anonymity and ease of data collection. The data was reported in Excel, and then uploaded to SPSS were multiple analyses between survey constructs, survey items, and tests for reliability and validity occurred. The data was “cleaned,” by removing blank surveys, those who were not eligible to participate, and surveys with more than 10% of items not having a response. A representation of the relationship between the three STCI factors, PsyCap, and employee engagement is provided with this model, based on measuring these variables using a regression analysis:

\[ Y \text{ (Employee Engagement)} = b_0 + b_1 \text{ (PsyCap)} + b_2 \text{ (Open Culture)} + b_3 \text{ (Ethics)} + b_4 \text{ (Follow Up)} \]
Chapter 4: Results

Chapter Overview

The three measures used within this study and their results will be discussed: The Sager-Thompson Change Inventory (STCI), Utrecht Work Engagement Scale - Nine Item (UWES-9), and Psychological Capital Questionnaire (PCQ-24). The STCI is comprised of three factors and 11 sub-factors, the UWES-9 has three factors, and the PCQ-24 has four factors. Composite scores, factor scores, and when applicable (the STCI) sub-factor scores, were analyzed for reliability using Cronbach’s Alpha. Relationships between factors and measures using a Pearson’s correlation, and multiple regression analyses was performed to investigate the relationship between variables and test the four hypotheses of the study, detailed below.

Demographic items were not asked on the survey due to the IRB’s concern for confidentiality of respondents given the recruitment style (the researcher’s social media), and sensitive nature of the questions (asking for opinions about one’s organization). Additionally, the study did not seek to answer any questions regarding gender, age, or ethnicity, so asking such questions would deviate from the direct relevance of the study. Instead, the demographic nature style of items asked pertained to one’s organization and type of change they had experienced, which are found within the Measures section and referred to as “Change Evocation Items”.

A total of 202 participants met all eligibility screening criteria and were then routed to the Change Evocation Items which served as our only demographics. Due to the sample size and other limitations previously discussed, results must be interpreted cautiously and considered an exploratory evaluation. Of these 202 respondents, 168 provided an open text response that asked them to describe the change event in three to six sentences. The majority, 78 individuals, responded that the change event began in 2017, closely followed by 75 individuals who indicated
their change event began in 2016. Change events that began before 2016 were very few: 10 respondents indicated the change they experienced began in 2015, five in 2014, and four in 2013. Only 162 respondents provided a response to indicate the type of change event which took place, from a list of options (detailed in the Measures section). All options were represented, with the most commonly selected change event type being Merger/Acquisition (n=53), followed by Reporting Structure (n=36), Job Expectations/Responsibilities (n=32), Process/Procedure (n=29), Other (short text box to define was then provided) (n=20), and finally Technology (n=12). Of those that said an “Other” type of change event occurred, most comments included a combination or two or more of the options applied, followed by staffing related changes such as hiring or layoffs/downsizing. When asked if they felt their organization handled the change event well, 107 responded positively (slightly agree, agree, or strongly agree responses), and 61 responded negatively (slightly disagree, disagree, or strongly disagree responses), indicating a full range of experiences amongst those who were eligible to complete the survey. The sample size of this study was 139 after a minimum 90% completion rate for each dimension of each measure was applied.

Table 1

*Descriptive Statistics by Measure and STCI Dimensions to Perception of Organization Change Success*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>α</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean (SD)</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
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<td>PCQ-24</td>
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<td>0.90</td>
<td>2.25</td>
<td>5.91</td>
<td>4.80 (0.57)</td>
<td>-1.13</td>
<td>2.74</td>
</tr>
<tr>
<td>UWES-9</td>
<td>145</td>
<td>0.92</td>
<td>1.22</td>
<td>6.00</td>
<td>4.22 (1.07)</td>
<td>-0.56</td>
<td>-0.03</td>
</tr>
<tr>
<td>Open Culture</td>
<td>155</td>
<td>0.94</td>
<td>1.25</td>
<td>5.85</td>
<td>4.00 (0.93)</td>
<td>-0.39</td>
<td>-0.12</td>
</tr>
<tr>
<td>Ethics</td>
<td>154</td>
<td>0.93</td>
<td>1.87</td>
<td>6.00</td>
<td>4.56 (0.88)</td>
<td>-0.75</td>
<td>0.25</td>
</tr>
<tr>
<td>Follow Up</td>
<td>149</td>
<td>0.94</td>
<td>1.33</td>
<td>5.93</td>
<td>3.59 (1.08)</td>
<td>0.05</td>
<td>-0.58</td>
</tr>
</tbody>
</table>
A Pearson’s Correlation was used to evaluate the relationship between all study factors, and sub-factor, please see Table 2 and Figure 2 respectively. This was done to evaluate at a high level whether there was a relationship between the study measures, and sub-factors of the measures. Relatively unstudied has been the relationship between individual and organizational factors around a change event. Researchers found only a moderately high significant correlation (exceeding a .50 or higher) between the individual dimension of Efficacy, and organizational sub-dimensions Flat Hierarchy ($r=.54, p<.05$) and Organizational Ethics ($r=.56, p<.05$). This suggests the organizational and individual factors are distinctly different.

Table 2

*Correlation of Study Dimensions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>OCS</th>
<th>PCQ-24</th>
<th>UWES-9</th>
<th>Ethics</th>
<th>Follow Up</th>
<th>Open Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCS</td>
<td>155</td>
<td>1</td>
<td>.30**</td>
<td>.27**</td>
<td>.68**</td>
<td>.71**</td>
<td>.77**</td>
</tr>
<tr>
<td>PCQ-24</td>
<td>148</td>
<td>.30**</td>
<td>1</td>
<td>.63**</td>
<td>.47**</td>
<td>.42**</td>
<td>.48**</td>
</tr>
<tr>
<td>UWES-9</td>
<td>145</td>
<td>.27**</td>
<td>.63**</td>
<td>1</td>
<td>.50**</td>
<td>.34**</td>
<td>.41**</td>
</tr>
<tr>
<td>Ethics</td>
<td>154</td>
<td>.68**</td>
<td>.47**</td>
<td>.50**</td>
<td>1</td>
<td>.68**</td>
<td>.84**</td>
</tr>
<tr>
<td>Follow Up</td>
<td>149</td>
<td>.71**</td>
<td>.42**</td>
<td>.34**</td>
<td>.68**</td>
<td>1</td>
<td>.86**</td>
</tr>
<tr>
<td>Open</td>
<td>149</td>
<td>.77**</td>
<td>.48**</td>
<td>.41**</td>
<td>.84**</td>
<td>.86**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Significant at .01
A Cronbach’s Alpha reliability analysis was used to evaluate internal consistency, or how closely related the items were on the STCI. The results indicate a high level of reliability for all three factors of the STCI: Follow Up $\alpha = .94$, and $\alpha = .93$ for both Open Culture and Ethics. All sub-factors were above .80 except for Debriefs ($\alpha = .78$) and Flat Hierarchy ($\alpha = .77$). Please see Table A1 in the Appendix for STCI item level details. For detailed discussion of item development and content validation, please reference the Measures section.

**Analysis of Hypotheses**

| Figure 2. Correlation of all study sub dimensions. **Significant at .01** |
| *Significant at .05* |

A Cronbach’s Alpha reliability analysis was used to evaluate internal consistency, or how closely related the items were on the STCI. The results indicate a high level of reliability for all three factors of the STCI: Follow Up $\alpha = .94$, and $\alpha = .93$ for both Open Culture and Ethics. All sub-factors were above .80 except for Debriefs ($\alpha = .78$) and Flat Hierarchy ($\alpha = .77$). Please see Table A1 in the Appendix for STCI item level details. For detailed discussion of item development and content validation, please reference the Measures section.
Two regressions were performed to evaluate the hypotheses of this study, to be discussed further. One regression focuses on predictors of organizational change success. The other focuses on predictors of engagement.

**Research Question One**

Is the STCI a reliable and valid predictor of organizational change success?

Overall, the STCI had a reliability of .98, indicating very good reliability. The STCI also showed convergent validity with the organizational change event success item \( r (147) = .77, p<.001 \) and some divergent validity with PsyCap \( r = .27 (141) = .45, p<.001 \), and engagement \( r = .30 (138) = .49, p<.001 \). The main three STCI factors also showed good reliability and validity: Open Culture \( \alpha = .93 \) was strongly and positively correlated with organizational change success, \( r = .77 \) \( (df) = .77, p<.001 \). Ethics \( \alpha = .93 \) was strongly and positively correlated with organizational change success, \( r = .68 \) \( (df) = .68, p<.001 \). Follow Up \( \alpha = .94 \) was strongly and positively correlated with organizational change success, \( r = .71 \) \( (df) = .71, p<.001 \).

Open Culture was theoretically designed to include five dimensions: Frequent Communication, Thorough Communication and Trustworthy Communication were all strongly and positively correlated to organizational change success, all \( r = .70 \) or higher. Flat Hierarchy was still strongly correlated \( r = .55 \) but Leader-Employee Relations only had a moderate correlation \( r = .37 \). This suggests that practically, the change event may have less to do with the structure of the organization and the relationship of the employee to their boss, as it does with their perceived quality of communication.

Regarding reliability, all items in Open Culture had item-total correlations of .50 or higher, except: “It is wise to know your place within the organization” \( r_{ix} = .46; r_{ic} = .37 \), and
"It is difficult to discuss work concerns with my manager" ($r_{ix} = .48; r_{ic} = .29$). Both items were reverse scored. Therefore, this low correlation could indicate some problems with participants fully reading or understanding the items.

Within Ethics, there were three dimensions. Organizational Ethics was strongly and positively correlated to organizational change success ($r = .68$). Both Interpersonal and Community Ethics had moderate correlations with Organizational Change Success, $r = .50$ and $r = .46$ respectively. Within both of these dimensions, there was one item that had lower item criterion correlations, which were “I worry about my co-workers taking advantage of me” ($r_{ic} = .33$), and “This organization has a positive impact on the surrounding community” ($r_{ic} = .35$). This suggests that possibly removing these items would increase both reliability and potentially validity.

Regarding reliability, all items in Ethics had item-total correlations of .50 or higher, except for “I worry about my co-workers taking advantage of me” ($r_{ix} = .44$). This item was reverse scored. This could indicate some problems with participants fully reading or understanding the item.

Within Follow Up, there were three dimensions. Lessons Learned, Follow Up, and Debriefs were all positively and strongly correlated to organizational change success ($r = .72, .65$, and .59 respectively). There was one problematic item with both a low item total correlation and low item criterion correlation ($r_{ix} = .39; r_{ic} = .26$). This item was reverse scored, which could indicate some problems with participants fully reading or understanding the item. The item was, “It seems that once the organization completed the change initiative, nothing else was mentioned about the event.”

STCI Factor Analysis
Regarding factor analysis, there were only enough participants to factor analyze each of the three factors separately, and not the entire STCI 50 items together. Therefore, it was not possible to determine whether the items fell into the three overarching factors. Each of the three factors were analyzed to see how the item fit the sub-factor structure. Please see Table A1 in the Appendix for factor loading details, and Figure 3 for a visual depiction of the STCI based on results.

Open Culture was theoretically designed to be five factors, but naturally factor analyzed into three factors. In the three-factor solution, all three of the factors had eigenvalues above one, percent of variance above 5% and the cumulative factors had 66.01% of the variance, which is close to the accepted threshold of 70%. The meaning of the items seems to fit the three factor structure the best, where Frequent Communication and Thorough Communication were one factor instead of two, and Trustworthy Communication and Flat Hierarchy were one factor instead of two. It also combined Frequent Communication and Thorough Communication were one factor instead of two. A forced five factor solution showed an improved cumulative percent of variance at 74.72%.

There were solid loadings for the Leader Employee Relations factor, as did the three-factor solution. However, the distribution of remaining items across Trustworthy Communication and Flat Hierarchy were not as clear. It makes sense to potentially use a three-factor model here, whereas trust and hierarchy seem to be pulling at the same underlying dimension. This is an interesting note that hierarchy may be related to trust.

Ethics was theoretically designed to be three factors, and naturally factor analyzed, meaning no forced factor design was used, into three factors. In the three-factor solution, all three of the factors had eigenvalues above one, percent of variance above 5% and the cumulative
factors had 73.86% of the variance. Nearly all items naturally factored into the designated factor in the theoretical design.

Two items, “I feel my organization treats me fairly” and “I believe my organization treats its’ staff fairly.” mapped into Interpersonal Ethics when it should have mapped onto Organizational Ethics. The wording of these two items are more similar to the items in the Interpersonal Ethics, which generally start with, “I believe” or “I feel,” whereas the Organizational Ethics items generally began, “At the time of this change even, I believe/felt”. This should be explored further.

Follow Up was theoretically designed to be three factors, and naturally factor analyzed into two factors. In the two-factor solution, both factors had eigenvalues above one, percent of variance above 5% and the cumulative factors had 62.78% of the variance. The meaning of the items seems to break into a different pattern, where the first factor reflected themes of feedback, difficulties, and improvement. The second factor reflected themes of progress, updates and summaries. When forced to a three-factor solution, the cumulative variance rose to 69.16%.

Figure 3. Sager-Thompson Change Inventory design based on results.
The first factor mapped to Lessons Learned and the second factor combined Debriefs and Recapping. The third factor pulled one item from each of the original factors which could possibly be interpreted as themes of end results and difficulties but was not as easy to decipher. Those three items were: “I know how the change event ended – successful, unsuccessful or somewhere in between,” “Difficulties that arose due to the change event were discussed,” and “Discussion of the change event as a whole has taken place.”

Overall, the results showed that Open Culture had the strongest predicting power, and our item analyses showed that it had the cleanest factor structure, once combining four factors into two. It did have several problematic items that could change these results upon removal, but our sample size does not warrant removing items. Of interest, the communication factors were the most valid.

The other two factors, Ethics and Follow Up had high reliability as well, and fairly clean factor structure results. There were several problematic items as well, that should be re-examined with larger sample sizes. The measure was written with 50 items to be able to eventually reduce the items to the best ones.

**Engagement**

**Research Question Two**

$H_1$: There is a positive relationship between PsyCap score and employee engagement.

The first regression looks at 139 respondents to see if organization factors (measured by three dimensions of the STCI: Open Culture, Ethics, and Follow up), and PsyCap (measured using the PCQ-24 total score), predicted engagement (UWES-9 total score, the criterion). The overall model was significant, $R^2 = .45$, $F(4,134) = 27.87$, $p < .001$. This is a medium effect size (Cohen, 1988). The overall model is a significant predictor and accounts for 45% of variance of
respondent’s engagement, please see Table 3. The regression equation was: Engagement = -1.57 + .98 (PsyCap) + .01 (Ethics) + .07 (Follow up) + .21 (Open Culture).

PsyCap was the only significant predictor of engagement, $\beta = .52$, $t(134) = 7.13$, $p < .001$, please see Table 3. This indicates higher levels of PsyCap results in higher levels of employee engagement. These findings support $H_1$.

Table 3

*Regression Results: STCI Dimensions and PsyCap as Predictors of Engagement*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>SE</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCQ-24</td>
<td>.98**</td>
<td>.14</td>
<td>.52</td>
</tr>
<tr>
<td>Ethics</td>
<td>.01</td>
<td>.15</td>
<td>.00</td>
</tr>
<tr>
<td>Follow Up</td>
<td>.07</td>
<td>.13</td>
<td>.07</td>
</tr>
<tr>
<td>Open Culture</td>
<td>.21</td>
<td>.19</td>
<td>.19</td>
</tr>
</tbody>
</table>

Research Question Three

$H_2$: There is a positive relationship between the Sager-Thompson Change Inventory (STCI) and engagement around an organizational change event.

No organizational factors predicted engagement, as discussed under $H_1$. It is worth noting that initially a positive moderate statistically significant correlation was found between engagement (UWES-9 total score), and each of the three factors in the STCI: Open Culture ($r = .48$, $p < .01$), Ethics ($r = .47$, $p < .01$), and Follow up ($r = .42$, $p < .01$). However, the regression analysis modeling PCQ-24 and STCI factors predicting engagement showed that when modeled
with PCQ, STCI factors are partialed out. This indicates that PCQ is the only a driver of employee engagement in this study.

**Research Question Four**

*H3:* PsyCap is more influential to employee engagement during a change event than organizational factors.

The regression analysis discussed under H1 and H2 indicated that PsyCap was the only significant predictor of engagement: $\beta = .52, t(134) = 7.13, p < .001$. While it was expected that PsyCap would be the strongest driver of engagement, it was expected that organizational factors would also serve as a significant predictor of engagement (a lower, but significant beta weight). However, the results indicated that PsyCap is the only significant predictor of engagement, supporting H3. Please reference Table 3.

**Organizational Change**

**Research Question Five**

*H4:* The STCI is expected to predict the participant’s perception of the success of their most recent, large change event within their current organization.

The second regression performed looks at 139 respondents to see if engagement, PsyCap, and organizational factors (STCI dimensions Open Culture, Ethics, and Follow up) predict perception of an organizational change event success (OCS, the criterion variable), please reference Table 4. The overall model was significant, $R^2 = .63, F(5,133) = 45.47, p < .001$. This is a medium effect size (Cohen, 1988). The overall model is a significant predictor and accounts for 63% of variance of respondent’s perception of OCS. The regression equation was: OCS = -.80 -.11 (PsyCap) + .27 (Ethics) + .21 (Follow up) + .86 (Open Culture) -.10 (Engagement).
Table 4

Regression Results: STCI Dimensions, PsyCap, and Engagement as Predictors of Organizational Change Success

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCQ-24</td>
<td>-.11</td>
<td>.18</td>
<td>-.04</td>
</tr>
<tr>
<td>UWES-9</td>
<td>-.10</td>
<td>.10</td>
<td>-.07</td>
</tr>
<tr>
<td>Ethics</td>
<td>.27</td>
<td>.17</td>
<td>.16</td>
</tr>
<tr>
<td>Follow Up</td>
<td>.21</td>
<td>.14</td>
<td>.16</td>
</tr>
<tr>
<td>Open Culture</td>
<td>.86**</td>
<td>.22</td>
<td>.56</td>
</tr>
</tbody>
</table>

$R^2 = .63$ **Significant at .01

All shared variance between factors were partialed out in the regression, leaving one individual predictor, Open Culture, that was a significant predictor of OCS, $β = .56$, $t(133) = 3.94$, $p < .001$, please see Table 4. This indicates higher levels of Open Culture lead to higher (more favorable) perceptions of an organizational change event. Within the Open Culture dimension there are five sub-dimensions.

An exploratory regression was conducted to understand which of the sub-dimensions of Open Culture were related to OCS, please see Table 5. Leader Employee Relations, Flat Hierarchy, Trustworthy Communication, Frequent Communication, and Thorough communication were predictors and OCS were the criterion. This model was significant, $R^2 = .63$, $F(5, 143) = 48.52$, $p < .001$.

The three communication factors were the only significant predictors. This was positively related to OCS, $β = .31$, $t(143) = 3.18$, $p < .01$. Frequent Communication was positively related to OCS, $β = .25$, $t(143) = 2.51$, $p < .05$. Thorough Communication was positively related to OCS, $β = .20$, $t(143) = 2.41$, $p < .05$. This means that of all dimensions and
sub-dimensions measured in this study, those related to communication were the most important to one’s perception of organizational change.

Table 5

Regression Results: Open Culture Sub-Dimensions as Predictors of Organizational Change Perception

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader Employee Relations</td>
<td>.09</td>
<td>.08</td>
<td>.07</td>
</tr>
<tr>
<td>Flat Hierarchy</td>
<td>.13</td>
<td>.11</td>
<td>.09</td>
</tr>
<tr>
<td>Trustworthy Communication</td>
<td>.26*</td>
<td>.11</td>
<td>.20</td>
</tr>
<tr>
<td>Thorough Communication</td>
<td>36**</td>
<td>11</td>
<td>.31</td>
</tr>
<tr>
<td>Frequent Communication</td>
<td>.29*</td>
<td>.11</td>
<td>.25</td>
</tr>
</tbody>
</table>

$R^2 = .63$ *Significant at .05 **Significant at .01
Chapter 5: Discussion and Conclusions

**Introduction**

Examining organizational and individual factors together had been relatively unstudied and could provide valuable insights into what drives organizational change success. It was the promise of uncovering insights which may benefit organizations and employees experiencing change that motivated the researcher to conduct this study. Discussion of results, implications, and potential for further research are to follow.

**Discussion**

Investigating organizational change was a challenging undertaking, due in part to broad definitions of what a “successful” or “failed” change implementation looks like, and the lack of a universal measure that has been validated to evaluate organizational change success. The success or failure of a change implementation has largely been defined by the opinion of only a few people within an organization, oftentimes a CEO, senior level executive, and perhaps the individual tasked with leading the implementation. The perception of the wider workforce has largely been ignored, or typically captured in qualitative and informal methods, leading to a lack of employee representation when evaluating change implementation.

At best, the limited quantitative information regarding organizational change success were evaluated using surveys not written or administered in a way that promotes honest and confidential responses. The goal of this study was to attempt to address these gaps in the literature and industry, by providing not only insight into individual and organizational factors that influence one’s engagement and change perception, but to explore a measure that could be used to evaluate organizational change. This study is exploratory in nature due to the sample size and other limitations previously discussed.

**Research Question One**
Though preliminary in nature, this study addresses the question of whether the STCI is a valid and reliable measure of organizational factors and organizational change perception. There was high level of internal reliability and validity of all three STCI factors. However, the STCI will need to be evaluated further in the future to account for the limitations of this study, and further evaluate its ability to be used as an adequate organizational change measure.

**Research Question Two**

Researchers found that only individual factors predicted employee engagement when engagement was used as the dependent variable, and had a strong positive relationship, where higher PsyCap resulted in higher engagement. This supports the hypothesis that a predictive relationship between PsyCap and engagement exists. This also repeats the findings of limited existing research on the relationship between PsyCap and Engagement (Ratzlaff & Thompson, 2017; Straetmans & Thompson, 2015).

The results indicating a predictive positive relationship between PsyCap and engagement is important because PsyCap can be improved; this suggests one’s engagement could be improved by developing their PsyCap (Dawkins, et al., 2013; Luthans & Avey, 2007). This new means of improving employee engagement could have a large, positive impact on the industry. Engagement is widely believed to be an indicator of how much an employee contributes to their workplace, so high levels of engagement are desirable due to the promise of greater desirable organizational outcomes (Kahn, 1990; Schultz & Schultz, 2008).

**Research Question Three**

In terms of predicting organizational change success (OCS) perception, this study did not support the hypothesis that PsyCap can predict one’s perception of an organizational change event. This suggests that organizations should take more accountability over an individual’s
perception of change implementation, rather than assuming individual factors will drive their perception. This preliminary evidence should be empowering to organizations, rather than seeing change perception as something outside of their ability to control.

**Research Question Four**

The hypothesis that PsyCap is more influential to engagement than organizational factors was supported. While this was expected due to limited existing literature showing a relationship between engagement and PsyCap, it was surprising to find that PsyCap was the only predictor of engagement. Not one organizational factor predicted one’s employee engagement. As mentioned under Research Question 2, the implications of a relationship between PsyCap and engagement are huge for organizations, offering a new way to potentially develop engagement vicariously by developing one’s PsyCap through training.

**Research Question Five**

The hypothesis that the STCI can predict one’s perception of change was supported. However, only the Open Culture dimension within the STCI was significant predictor of one’s perception of an organizational change success. The analysis revealed that within Open Culture, the three sub dimensions related to communication were the most important influences on organizational change success of all measures in the study. Though the importance of communication is persistently referenced in literature and industry best-practices, this study provides data to support that the specific practices of Thorough, Frequent, and Trustworthy communication have a significant influence on one’s perception of organizational change success.

**Implications**

The study results indicate organizational factors are most important in predicting one’s perception of organizational change, more specifically, organizational communication. The
factors on the STCI were derived from research and had been previously untested. Though exploratory, this study provides a measure and first look at how an organization can leverage individual and organizational factors to successfully implement change. The findings promote further study of the Sager-Thompson Change Inventory (STCI) in order to evaluate and predict one’s general favorability towards large organizational change events. It is important to note that despite this support, there remains a need to evaluate various elements to existing frameworks of organizational change such as those presented by Burke-Litwin, which may not be fully encompassed by the STCI (Burke, 2011).

An additional important insight with numerous practical implications is the PsyCap predicting engagement. Since PsyCap can be developed, the results of this study suggest a new means for organizations to improve engagement, through PsyCap development. The industry standard for improving engagement has focused on organization-level and sometimes work unit-level interventions. Focusing on individual development of PsyCap would be a relatively new and potentially more effective way to improve engagement.

Though additional study is necessary to thoroughly evaluate the influence of PsyCap to engagement, and the STCI to evaluate one’s perception of organizational change success, this study demonstrates several things organizations should begin to consider around change. The first is that it’s important to measure an employee’s perception of change in a clear and consistent manner, using the STCI or similar measure. Second, organizations should consider the areas that significantly predict organizational change perception to guide their change implementation strategy and communications. Communication that is Thorough, Frequent, and Trustworthy predicts a favorable perception of an organizational change event, and managers as well as leadership should spend a considerable amount of time crafting their communication
regarding the change to drive success. Finally, organizations should consider PsyCap development and training for their employees as a way to improve engagement.

Traditionally many organizations have focused on changing organizational factors to improve engagement, and believe some people are more able to adapt to change based on individual characteristics which influence their perception of change success. The study results suggested the opposite to be true: individual factors (PsyCap) had an influence on engagement, and organizational factors (Open Culture communication sub-dimensions) had an influence on organizational change perception. By understanding the drivers of engagement and OCS, organizations can better address employee engagement or organizational change implementation, promising higher levels of engagement, and higher success rates for change initiatives.

**Future Research**

There are a lack of measures that evaluate an individual’s perception of organizational change events, which this study sought to address through development of the STCI. Further research using STCI alongside validated, well-researched assessments such as the PCQ and UWES-9 may provide greater insights into the viability of using the STCI to assess perception of organizational change events. Increased sample sizes and diversity in participants through a more wide-spread recruitment strategy will increase the ability to determine whether this measure is generalizable to the greater population in its current state, or if perhaps some items should be removed, added, or edited to make it a better measure of organizational change perception.

A larger sample size and the ability to run a factor analysis on the entire STCI to confirm whether the measure should have three factors as theoretically designed would be beneficial to ensure validity and reliability. Having a design that asks the eligibility criteria as questions and
does not screen participants out based on their responses would be beneficial, so the influence of job change, short tenure, etc. could be evaluated and chances for a larger sample size improves. An additional improvement from the current study would be to have different criterion than a self-report formatted survey, thus potentially boosting validity. The last most notable improvement for future studies is to have additional measure(s) of organizational change perception to address mono operational bias, meaning that there is only one measure and thus the possibility for not measuring what we are intending to measure: organizational change perception, exists. If additional studies find the STCI to be reliable and valid, it promises a new and valuable way organizational change perception is evaluated in the industry, hopefully leading to feedback that organizations can use in their organizational change strategies, leading to higher organization change implementation success.

There are numerous practical implications from this exploratory study. Related to the industry, it provides empirical support for long-standing consulting wisdom that communication is the most important element to driving change. Having an easy to administer measure to assess how employees feel about organizational factors to predict change (STCI) would allow the potential for organizations to administer the survey before or during a change implementation and get valuable feedback on areas they may need to improve to promote successful implementation. At a larger, societal standpoint, the relationship between individual PsyCap factors and engagement could speak to ways one can develop themselves to be more engaged in their work. This also provides organizations a means to improve engagement by providing individual development (PsyCap) training.

**Conclusion**

The results of this study support that future research is justified on the STCI, as well as encourage the relationship between PsyCap and employee engagement. A measure that can be
used to evaluate and predict an individual’s perception of organizational change, could help organizations implement change more successfully, which has been a known struggle across industries. Additionally, the relationship between PsyCap and employee engagement could have an immense impact on how individuals are developed in the workplace. If PsyCap predicts higher engagement, PsyCap development could be a beneficial business practice. The impact each individual has on and organization is evident in these study results, benefits the industry to better understand how to leverage individuals to drive organizational initiatives.
References


doi:10.1080/13678868.2012.740794


doi:10.1080/14697017.2011.568949


doi:10.1108/13620430810870476


## APPENDIX

### Table A1

**Sager-Thompson Change Inventory: Item Details Grouped by Sub-Factor**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$r$</th>
<th>Corrected Item Total Correlation With STCI</th>
<th>Mean (SD)</th>
<th>Factor Loading</th>
<th>STCI Factor</th>
<th>STCI Sub Factor</th>
<th>Forced Factor Loading</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. I oftentimes lacked important information regarding the change initiative.</td>
<td>.52**</td>
<td>.66**</td>
<td>3.18 (1.51)</td>
<td>0.69</td>
<td>Open Culture</td>
<td>Communication – Frequent</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>16. There was frequent communication around the change initiative.</td>
<td>.60**</td>
<td>.75**</td>
<td>3.56 (1.51)</td>
<td>0.74</td>
<td>Open Culture</td>
<td>Communication – Frequent</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>44. There was regular communication during the time of the change initiative.</td>
<td>.60**</td>
<td>.78**</td>
<td>3.73 (1.37)</td>
<td>0.76</td>
<td>Open Culture</td>
<td>Communication – Frequent</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>49. I received information regarding the change initiative in a timely manner.</td>
<td>.70**</td>
<td>.79**</td>
<td>3.9 (1.46)</td>
<td>0.83</td>
<td>Open Culture</td>
<td>Communication – Frequent</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9. The communication I received during the change initiative lacked important information.</td>
<td>.63**</td>
<td>.77**</td>
<td>3.22 (1.42)</td>
<td>0.77</td>
<td>Open Culture</td>
<td>Communication – Thorough</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11. The communication around the change initiative addressed my concerns as to how the change would personally affect me.</td>
<td>.57**</td>
<td>.70**</td>
<td>3.49 (1.49)</td>
<td>0.69</td>
<td>Open Culture</td>
<td>Communication – Thorough</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>24. The communication I received regarding the change was detailed enough.</td>
<td>.69**</td>
<td>.84**</td>
<td>3.58 (1.38)</td>
<td>0.84</td>
<td>Open Culture</td>
<td>Communication – Thorough</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>42. The communication around the change initiative answered all of the questions that I had.</td>
<td>.69**</td>
<td>.76**</td>
<td>3.17 (1.44)</td>
<td>0.79</td>
<td>Open Culture</td>
<td>Communication – Thorough</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>14. I believe the communication I receive(d) from my organization about the change was unbiased.</td>
<td>.54**</td>
<td>.72**</td>
<td>3.75 (1.47)</td>
<td>0.74</td>
<td>Open Culture</td>
<td>Communication – Trustworthy</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33. At the time I received it, I believed the communication around the change initiative to be true.</td>
<td>.50**</td>
<td>.56**</td>
<td>4.64 (1.17)</td>
<td>0.62</td>
<td>Open Culture</td>
<td>Communication – Trustworthy</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Question</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
<td>Category</td>
<td>Rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-----------------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. I believe the communication I receive in my organization is accurate.</td>
<td>0.54**</td>
<td>0.70**</td>
<td>4.3</td>
<td>0.73</td>
<td>Open Culture Trustworthy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48. I trust the information I received from my organization regarding the change.</td>
<td>0.68**</td>
<td>0.77**</td>
<td>4.18</td>
<td>0.8</td>
<td>Open Culture Trustworthy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. This organization treats its customers with respect.</td>
<td>0.42**</td>
<td>0.61**</td>
<td>5.02</td>
<td>0.7</td>
<td>Ethics Community Ethics</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. This organization has a positive impact on the surrounding community.</td>
<td>0.35**</td>
<td>0.52**</td>
<td>4.75</td>
<td>0.83</td>
<td>Ethics Community Ethics</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I believe my organization treats the community fairly.</td>
<td>0.45**</td>
<td>0.65**</td>
<td>4.99</td>
<td>0.83</td>
<td>Ethics Community Ethics</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. This organization cares about its impact on others outside the organization.</td>
<td>0.41**</td>
<td>0.55**</td>
<td>4.73</td>
<td>0.88</td>
<td>Ethics Community Ethics</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50. I believe my organization treats its consumers/clients/patients fairly.</td>
<td>0.42**</td>
<td>0.63**</td>
<td>4.99</td>
<td>0.67</td>
<td>Ethics Community Ethics</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Concerning the recent change initiative, the organization continues to update employees with relevant information related to the change.</td>
<td>0.49**</td>
<td>0.66**</td>
<td>3.76</td>
<td>0.71</td>
<td>Follow Up Debriefs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I know how the change event ended– successful, unsuccessful, or somewhere in between.</td>
<td>0.52**</td>
<td>0.60**</td>
<td>4.11</td>
<td>0.82</td>
<td>Follow Up Debriefs</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Regular meetings took place to discuss the status of the change event while it was occurring.</td>
<td>0.51**</td>
<td>0.72**</td>
<td>3.61</td>
<td>0.68</td>
<td>Follow Up Debriefs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. It seems that once the organization completed the change initiative, nothing else was mentioned about the event.</td>
<td>0.26**</td>
<td>0.39**</td>
<td>3.51</td>
<td>0.81</td>
<td>Follow Up Debriefs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. New ideas are encouraged in my organization.</td>
<td>0.52**</td>
<td>0.76**</td>
<td>4.4</td>
<td>0.7</td>
<td>Open Culture Flat Hierarchy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. I feel free to collaborate with employees regardless of their management level.</td>
<td>0.43**</td>
<td>0.59**</td>
<td>4.75</td>
<td>0.6</td>
<td>Open Culture Flat Hierarchy</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
34. It is wise to “know your place” within my organization.  
   | .37** | .46** | 3.05 (1.22) | 0.46 | Open Culture | Flat Hierarchy | 5   | 2  |

35. I can express my opinions to senior leaders within my organization.  
   | .43** | .67** | 4.23 (1.36) | 0.68 | Open Culture | Flat Hierarchy | 4   | 2  |

8. I believe my colleagues treat one another fairly.  
   | .40** | .61** | 4.83 (1.14) | 0.87 | Ethics      | Interpersonal Ethics | 1   | 1  |

19. My co-workers are respectful to one another.  
   | .40** | .53** | 4.86 (1.09) | 0.9  | Ethics      | Interpersonal Ethics | 1   | 1  |

23. I believe employees at my organization treat me fairly.  
   | .49** | .62** | 4.82 (1.1)  | 0.71 | Ethics      | Interpersonal Ethics | 1   | 1  |

29. The culture of my organization encourages people to take care of one another.  
   | .52** | .74** | 4.4 (1.36)  | 0.6  | Ethics      | Interpersonal Ethics | 1   | 1  |

30. I worry about co-workers taking advantage of me  
   | .33** | .44** | 4.36 (1.38) | 0.54 | Ethics      | Interpersonal Ethics | 1   | 1  |

2. I feel welcome to approach my manager with concerns.  
   | .42** | .61** | 4.73 (1.42) | 0.63 | Open Culture | Leader-Employee Relations | 2   | 3  |

7. I would describe my relationship with my manager as friendly.  
   | .41** | .62** | 5.25 (1.05) | 0.62 | Open Culture | Leader-Employee Relations | 2   | 3  |

32. I feel I can be honest with my manager.  
   | .37** | .63** | 4.82 (1.34) | 0.65 | Open Culture | Leader-Employee Relations | 2   | 3  |

40. It is difficult to discuss work concerns with my manager.  
   | .29** | .48** | 4.44 (1.48) | 0.64 | Open Culture | Leader-Employee Relations | 2   | 3  |

12. My organization was honest about mistakes that were made during the organizational change initiative.  
   | .64** | .77** | 3.18 (1.52) | 0.68 | Follow Up    | Lessons Learned      | 1   | 2/3|

25. Difficulties that arose due to the change event were discussed.  
   | .58** | .69** | 3.81 (1.49) | 0.82 | Follow Up    | Lessons Learned      | 3   | 1  |

38. Learning opportunities from the change were discussed.  
   | .46** | .66** | 3.3 (1.48)  | 0.64 | Follow Up    | Lessons Learned      | 1   | 2  |

43. I feel the organization used feedback about this organizational change to improve.  
   | .63** | .78** | 3.42 (1.49) | 0.69 | Follow Up    | Lessons Learned      | 1   | 1  |
45. My organization sought feedback from me on the organizational change initiative. 0.46** 0.66** 3.29 (1.76) 0.53 Follow Up Lessons Learned 1 1

46. Ways to prevent difficulties as a result of the change were discussed. 0.57** 0.75** 3.3 (1.52) 0.66 Follow Up Lessons Learned 1 1

6. At the time of this change event, I believed the change event would be beneficial to a large majority of the employees. 0.58** 0.63** 3.81 (1.66) 0.86 Ethics Organization al Ethics 3 3

22. At the time of this change event, I believed the organization cared about its’ employees and their well-being. 0.66** 0.79** 4.15 (1.49) 0.89 Ethics Organization al Ethics 3 3

31. At the time of this change event, I felt this organization cared about my welfare and well-being. 0.58** 0.74** 4.05 (1.41) 0.76 Ethics Organization al Ethics 3 3

41. I feel my organization treats me fairly. 0.52** 0.73** 4.52 (1.24) 0.56 Ethics Organization al Ethics 1 1

47. I believe my organization treats its’ staff fairly. 0.56** 0.77** 4.33 (1.27) 0.61 Ethics Organization al Ethics 1 1

1. A comprehensive summary of the change event took place. 0.58** 0.71** 3.66 (1.53) 0.73 Follow Up Recapping 2 2

3. During the organizational change initiative, it was thoroughly explained why we were undertaking the change initiative. 0.54** 0.68** 4.22 (1.48) 0.53 Follow Up Recapping 2 2

10. During the organizational change initiative, milestones or markers of progress were discussed. 0.44** 0.58** 3.63 (1.5) 0.73 Follow Up Recapping 2 2

27. Discussion of the change event as a whole has taken place. 0.47** 0.66** 4.13 (1.37) 0.69 Follow Up Recapping 3 1

39. Reviewing all key milestones from the change's start to completion has occurred. 0.54** 0.69** 3.08 (1.49) 0.63 Follow Up Recapping 1 2

** Correlation is Significant at the 0.01 level (2-tailed)
Table A2

*Sample Items: Utrecht Work Engagement Scale Nine Item (UWES-9)*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At my work, I feel bursting with energy.</td>
<td>Likert Scale 0=Never to 6= Always</td>
</tr>
<tr>
<td>2. At my job, I feel strong and Vigorous.</td>
<td>Likert Scale 0=Never to 6= Always</td>
</tr>
<tr>
<td>3. I am enthusiastic about my job.</td>
<td>Likert Scale 0=Never to 6= Always</td>
</tr>
<tr>
<td>4. My job inspires me.</td>
<td>Likert Scale 0=Never to 6= Always</td>
</tr>
</tbody>
</table>

*Wefald, et al., 2012*

Table A3

*Sample Items: Psychological Capital Questionnaire (PCQ)*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel confident in analyzing a long-term problem to find a solution.</td>
<td>Strongly Disagree - Strongly Agree</td>
</tr>
<tr>
<td>2. I feel confident contacting people outside the company (e.g., suppliers, customers) to discuss problems.</td>
<td>Strongly Disagree - Strongly Agree</td>
</tr>
<tr>
<td>3. Although supervisor assigns me an extra job, which I never had done it, I still believe in my ability that I can do it.</td>
<td>Strongly Disagree - Strongly Agree</td>
</tr>
<tr>
<td>4. I am confident in my performance that I can work under pressure and challenging circumstances.</td>
<td>Strongly Disagree - Strongly Agree</td>
</tr>
</tbody>
</table>

*Luthans, et al., 2007*