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Exploring the Relationships between Motivations, Beliefs, Emotions, and Behaviors in the Context of Organizational Change Readiness

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EXPLORING THE RELATIONSHIPS BETWEEN MOTIVATIONS, BELIEFS, EMOTIONS, AND BEHAVIORS IN THE CONTEXT OF ORGANIZATIONAL CHANGE READINESS

by

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ABSTRACT

Organizational change is an inevitable and key feature of an organization's lifecycle, especially in today's constantly shifting technological, cultural, and corporate landscapes. However, organizations often struggle to adapt, and change initiatives rarely succeed. Because of this, organizational change readiness has become a popular area of study in the field of industrial-organization psychology. Change readiness in the organizational context has been redefined several times over the past four decades, with recent efforts focused on developing a comprehensive definition and corresponding instrument of measurement for the concept. Change readiness at the individual level is intended to evaluate the psychological state in which someone is inclined to accept or support a change that alters the current condition of their organization.

An employee's level of change readiness has implications for the organization as a whole and is predictive of whether a change initiative will succeed or fail. Understanding the unique personal, social, and contextual elements that precede individual change readiness and how to measure them accurately is critical to the organizational change model. Without this information, it is difficult to accurately predict when, how, or why one may engage in change-supportive behaviors. This study builds on an existing change-readiness model by incorporating motivation as a key component of the individual attributes that influence one's level of readiness for change. Motivation is assessed through the lens of reversal theory, as this theory offers a unique view of capturing individual variability in response to change. Prior work has focused mainly on

the cognition (belief) and affect (emotion) components of change readiness. This study examines the ever-changing relationship between motivations, beliefs, and emotions in the context of organizational change readiness. This is done through developing a theory-based instrument, utilizing novel research methods of congruency, and assessing positive organizational outcomes. The goal of the study was to contribute to both the theoretical and practical domains of organizational change by offering a deeper understanding of the human element and providing a valuable tool for practitioners in industrial-organizational psychology and human resource management. A linear model with an interaction term was utilized to assess the relationship between motivations and behaviors in regard to change-supportive behaviors.

The results of this study reveal instances of support for a congruence effect between beliefs and motivation, particularly when individuals are motivated by goal achievement and organizational cohesion. Affect was shown to have a significant relationship with change-supportive behaviors, and further analyses revealed a nuanced relationship between affect and the congruency effect of beliefs and motivations. Overall, the results and limitations of this study provide contributions to the current literature, as well as potential avenues for future research.

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CHAPTER 1

INTRODUCTION

As organizations face increasing pressure to innovate and respond to changing market conditions (De Meuse et al., 2011; Lüscher & Lewis, 2008), the role of employee motivation in creating readiness for change has become a prominent area of study. A large body of research exists within the realm of organizational change that identifies individual readiness for change as a key factor in the efficacy of change initiatives at the organizational level. Successful implementation of change initiatives is important for organizations to remain competitive and adaptable (Burke, 2018). Thus, organizational development researchers have aimed to capture and refine the construct in order to better gain theoretical and practical insights for use in an organizational change setting.

Attempts to define and measure change readiness in the organizational context have been plentiful over the past 40 years, with more recent developments attempting to aggregate the extant literature and create a more comprehensive definition (Holt, Armenakis, Harris, & Feild, 2007; Holt & Vardaman, 2013). Such attempts are necessary for advancing the science and practice of enacting change and often require corresponding forms of measurement to be revised or developed anew. The development of sound measures for unobservable variables allows researchers to feel more confident in interpreting relationships developing theoretical models (Hinkin, 1995). A latent construct cannot be adequately conceptualized in terms of its antecedents and outcomes

without some method to identify and quantify its existence (Bollen, 1989). As the definition of readiness for organizational change has evolved, Holt, Armenakis, Harris, and Feild (2007) recommend choosing an existing theoretical framework to develop scales that assess the conceptual components based on that theory. The current research aims to develop an instrument that captures the individual attributes of change readiness grounded in reversal theory. The reversal theory (RT) framework offers a unique lens through which to view individual variability in response to change (Apter, 1984). RT posits that individuals alternate between different motivational and emotional states, which in turn influences their behavior and attitudes. This study aims to examine these states and the way in which they interact in the context of organizational change. By leveraging this theory, the current research seeks to create a more nuanced tool for assessing change readiness.

This study did not focus solely on the development of an instrument for capturing motivations but also examined the results in relationship with change-supportive behaviors. Understanding the link between this study's expanded conceptualization of change readiness and the behaviors that employees undertake in the face of organizational change efforts may be of use in the design and implementation of change initiatives. The current study examines the interaction between the psychological variables and how that interaction may contribute to employee outcomes, rather than just assessing the role each variable plays separately. Identifying individual attributes of employees void of context and criterion measures can be more harmful than helpful, as there may not be suitable evidence to develop appropriate action steps. Ignoring the situational aspects when evaluating emplo3yee readiness can lead to resistance to the

change and hinder the initiative's success (Armenakis et al., 1993). By exploring the interaction between each individual's attributes and how it relates to their subsequent behaviors, the current research aims to provide actionable insights to guide organizations in effectively managing and facilitating the change process.

In summary, there are three primary objectives of this research: to introduce motivation as a key component of individual change readiness, develop a new, theory-based instrument for measuring motivation in the organizational change context, and to empirically examine how readiness is related to the achievement of positive outcomes in organizational change scenarios. These objectives aim to contribute to both the theoretical and practical domains of organizational change by offering a deeper understanding of the human element and providing a valuable tool for practitioners in the field of industrial-organizational psychology and human resource management.

CHAPTER 2

LITERATURE REVIEW

Readiness for Organizational Change

Organizational change theory stems from Lewin's (1947) theory of planned change and its three-step model that consists of the following major components: unfreezing, moving, and freezing. Change readiness researchers have since embraced this foundational approach as a methodology to explain the process in which successful implementation of change occurs in the organizational context. More recently, Lewin's theory has been reimagined as readiness, adoption, and institutionalization (Holt, Armenakis, Feild, & Harris, 2007). Through efforts to break down and understand the factors that play a role in this process, change readiness has emerged as a distinct and important construct in the field of organizational development.

Employee perceptions of change can be traced back to Coch and French's (1948) pivotal studies that aimed to uncover why employees resist change and what leadership can do to mitigate employee resistance. Their findings emphasized the importance of leaders effectively communicating the need for change and actively involving employees in the change process. Subsequent research mimicked the same logic with the primary goal of preventing opposition to change. Change resistance was the main focus in this field until Jacobson (1957) theorized that employees' attitudes towards change could be

considered in terms of their willingness to participate in or enthusiasm toward the change. Researchers were receptive to this notion and adapted their studies accordingly. A key example of this is when Bartlem and Locke (1981) reinvestigated the work of Coch and French. They concluded that the original suggestions from the study were not just methods of inhibiting resistance but methods of facilitation to invoke a state of readiness within the employees. As a result, it was accepted that understanding employee attitudes toward change requires more than just considering the absence of resistance. Thus, change readiness was adopted as a valuable construct, distinct from change resistance. The fundamental insights and implications from these studies have contributed and continue to contribute to the development of the field's contemporary models.

Armenakis et al. (1993) first formally defined change readiness in the organizational context as "beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization's capacity to successfully undertake those changes." The construct is still accepted as distinct from resistance to change rather than the inverse of resistance to change and is now widely considered as the cognitive precursor to the behaviors associated with support for a change effort (e.g., adapting work processes in accordance with the change or communicating the change to others in a positive way; Armenakis et al., 1993). Organizational outcomes linked to change readiness include implementation effectiveness (Weiner, 2009), change capabilities, collective performance, and group attitudes (Rafferty et al., 2013) at the organizational level. At the individual level, we see change-supportive behaviors, job performance, and job attitudes (Rafferty et al., 2013). Work-related outcomes include job satisfaction, organizational commitment, and job performance (Oreg et al., 2011). Personal outcomes

may include positive changes to individuals' well-being, health, and withdrawal (Oreg et al., 2011).

Recent efforts in the change readiness literature have aimed to develop a multilevel perspective that highlights the differences in the construct at the individual, group, and organizational levels (Rafferty et al., 2013; Vakola, 2013). This notion leads to the idea that relationships that exist at one level of analysis may differ in strength at different levels of analysis (Kozlowski & Klein, 2000; Ostroff, 1993). Thus, it is important to assess the antecedents and outcomes at each level so that we may understand how each level operates and how they are interconnected. This has been a notable advancement in the development of change readiness, as it combats the tendency to assign a certain level of readiness to an entire organization based on characteristics at the individual level (Bouckenooghe, 2010).

This study aims to assess the psychological processes that occur at the individual level of analysis. Prior research has identified individual attributes that are related to organizational change readiness. For example, Rafferty et al. (2013) assert the importance of recognizing both the cognitive and affective components of change readiness while discounting the role of motivation. I argue that the three are interdependent processes that work together to shape psychological experiences and behaviors, such as change readiness and the ensuing actions one takes to support a change. Excluding motivation from the equation disqualifies the role that it plays in influencing cognition and affect, as well as the reciprocal effects that cognition and affect have on motivation (Ryan & Deci, 2000). Understanding the complex interplay of motivation, cognition, and affect as it relates to individual change readiness can help organizations implement appropriate

change interventions that are most closely related to the initiation of change-supportive behaviors.

Cognitive and Affective Components of Change Readiness

Cognition and affect have been shown to play a critical role in an individual's readiness for change (Armenakis et al., 2007; Armenakis & Harris, 2002; Oreg et al., 2011). So much so that Holt, Armenakis, Harris, and Feild (2007) implemented this notion into their updated comprehensive definition of the construct as "the extent to which an individual or individuals are cognitively and emotionally inclined to accept, embrace, and adopt a particular plan to purposefully alter the status quo." The cognitive components these authors refer to are based on the five beliefs initially identified by Armenakis and Harris (2002), comprising of: 1) efficacy – the extent to which one believes they have the skills and/or resources necessary to execute the change, 2) discrepancy – the extent to which one feels that the change is needed; 3) appropriateness – the extent to which one feels that the change is a suitable course of action; 4) personal valence – the extent to which one feels that they will benefit from the potential outcomes of the change; and 5) principal support – the extent to which one feels that others in the organization are committed to and support the change. Much of the recent literature has found support for these beliefs and their relationship with change-supportive behaviors (e.g., Rafferty et al., 2013). Additionally, other researchers have argued that the inclusion of other personal characteristics, such as affect, is instrumental in predicting such outcomes.

Several recent studies have examined the affective component of change readiness alongside the five principal beliefs and affect's unique linkage to employees'

overall judgment of a change (Kiefer, 2002; Liu & Perrewe, 2005; Rafferty et al., 2013; Rafferty & Minbashian, 2019). These studies have focused exclusively on positive emotional responses to a specific change event, rather than the entire range of emotional experience. Rafferty and Minbashian (2019) found that change-positive emotions (e.g., joy and interest) were not only significantly related to change-supportive behaviors but accounted for a majority of the variance explained when analyzed in parallel with the five change beliefs.

Nonetheless, the cognitive and affective components of change readiness do not tell the whole story on their own. Holt, Armenakis, Harris, & Feild (2007) preface their aforementioned definition by referring to change readiness as: "a comprehensive attitude that is influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., circumstances under which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved." It is the combination of all these factors that form the underlying judgment about a change that is reflected in one's cognition, affect, and intention. Beliefs and emotions have been emphasized in the literature while discounting the role of motivation as part of the human psyche and the complex reciprocal relationships between the three constructs (Ajzen, 1991). There are motivational tendencies within each person that make them more likely to believe, feel, or act in a specific way (Apter, 1984; the reversal theory of motivation takes this into consideration and is explained in depth in the following sections). Without considering the interplay of motivation as a distinct cog in one's psychological machine, there may not be enough evidence to suggest that an individual will or will not behave in any given way. Armenakis and Harris (2009)

highlight the importance of understanding change readiness in terms of motivation. They go on to summarize the goal of their thirty-year-long journey as significant contributors to this field as "a quest to understand the bases for individual motivations to support change efforts" (Armenakis & Harris, 2009). Motivation is admittedly critical to the structure and potential impact of this construct. Yet, motivational theories have not been recognized or integrated into mainstream change readiness literature.

Motivation as a Component of Change Readiness

There is a complex and dynamic relationship between motivation, beliefs, and affect. For example, an individual may believe that the organization would reach its goals by enacting the proposed change (the organizational change belief, discrepancy, the belief that the change is needed) but is not inherently motivated by goal achievement. They may be experiencing a motivational state that is most influenced by the means rather than ends. If they perceive the process of change as insufficiently stimulating or unengaging, then they will likely experience the negative affect of boredom (Apter, 1991). In accordance with organizational change theory, this combination is unlikely to lead to readiness for change or change-supportive behaviors due to a lack of positive affect. Cognition, affect, and motivation do not occur in separate vacuums, nor are they static psychological states. Beliefs, emotions, and motivational states can change over time, particularly in the face of change, where individuals are confronted with new information and uncertainty about the future. For these reasons, the incorporation of a motivational model that considers the complexity and fluidity of human experience may help us develop a more robust understanding of readiness for organizational change. Top researchers in this field have highlighted the criticality of including motivation as part of

the change readiness equation – "because changes must ultimately be implemented by change recipients, understanding their motivations to support organizational changes or not provides very practical insights into how to best lead change" (Armenakis & Harris, 2009). This present study calls on the reversal theory model of motivation to add incremental value to the current model of individual readiness for organizational change.

Reversal Theory

Apter's theory of motivation is built upon recognition of the ever-changing nature of psychological experiences (Apter, 1979, 1984, 2001). He postulates that motivation is state-based rather than trait-based and is thus dynamic and psychologically diverse. The state-based theory of motivation and personality can be characterized as "structural phenomenological" (Apter, 1981, pg. 286). The model is structural in that it organizes the motivational states and transitions between them, and it is phenomenological through its recognition that motivational states are experienced subjectively. Apter also describes RT as a theory of emotion and personality, in addition to motivation. Personality is conceptualized at a level fundamentally different from the assessment of one's traits, i.e., typical or preferred needs and desires. This deeper level of understanding is anchored in the state experiences of the individual. Apter envisions personality as the aggregation, pattern, and trajectory of states over time. He asserts "that to understand how a given individual functions, it is necessary to know something about his or her motivational characteristics, as well as his or her motivational behavioral tendencies and how the former relate to the latter" (Apter, 1984, p.273). The theory also bridges the divide between motivation and emotion.

Simply put, motivation is about what we want, and emotions are the feelings that arise depending on whether we get what we want. Both motivation and emotion are state constructs happening "in the moment" and vary over time, giving rise to both intra- and inter-individual variation. In the case of organizational change, motivation captures the desired benefits and barriers to supporting organizational change and should predict specific efforts to enhance it. How I feel about the change efforts as they unfold should reflect whether the motivations are satisfied and should also related to whether effort is exerted to support change.

In Apter's theory, motivations are conceptualized as four pairs of states, each representing different and opposite motivations. Apter (1981) posits that individuals may reverse between the opposite motivational states in a pair, depending on their circumstances and experiences. The four pairs are: (a) telic or paratelic, (b) conformist or negativistic, (c) mastery or sympathy, and (d) autic or alloic.

The first pair refers to the means and the ends (telic/paratelic). The telic state is characterized by goal orientation and a focus on purposeful outcomes. The paratelic state emphasizes the enjoyment of an activity for its own sake. Individuals in this state value the experience over the outcome. The second pair centers around rules and expectations (conformist/negativistic). Those in the conformist state prefer to follow rules and social norms, whereas those in the negativistic state, which is marked by rebellion, and those who value independence and/or challenging authority. Negativism is referred to as "rebelliousness" in this paper to avoid confusion that the state is about being "negative" or pessimistic. The third pair of states highlight differences in what one seeks from interactions (mastery/sympathy). Individuals in the mastery state have a desire to have

influence or control over the environment or others. In contrast, the sympathy state is about nurturing, caring, and showing compassion. Lastly, the autic/alloic pair of motivations refers to whether someone is motivated by self-interests (personal accountability and responsibility) or by the interests of others (altruism and transcendence). This pair of states highlights whether one is concerned primarily with oneself or identifying primarily with someone or something outside oneself (referred to as "self" and "other" from here on out). The last two pairs of motivational states are referred to as the transactional pairs because, when considered in combination, they clarify the nature of our motivations when interacting with the world. The self-mastery combination captures the motivation to personally have power or feel you are personally in control, whereas the other-mastery combination reflects one's desire for others to have or use their own power. In an organizational context, "others" may refer to individuals, teams, leaders, management, or the organization as a whole.

Reversal Theory Applied to Organizational Change Readiness

In reversal theory terms, change readiness cannot be understood via beliefs and emotions alone because they are, in part, shaped by what is motivating an individual at any given moment. The core tenet of reversal theory recognizes that motivations can change depending on the context of the situation and will differ across individuals. Because change is an emergent process that takes shape in infinitely different ways, we can infer that an individual's motivations to support a change may fluctuate over time or across settings. Incorporating a dynamic model, such as reversal theory, can allow us to capture the "why" behind employee behaviors in the face of an organizational change. The relationship between motivation, cognition (beliefs), and affect paints a fuller picture

of an individual's readiness and helps researchers better predict their behavioral outcomes.

Beliefs and Motivation

Cognition, as it is conceptualized in change readiness literature, refers to the beliefs that one has about the change and the factors that play a role in the change. More broadly, beliefs can be explained as one's perception of reality (i.e., the "as-is" state). Although beliefs play a role in determining one's motivational state, it may be an oversimplification of the psychological experience. Beliefs may be shifted to fit the current motivational state that one is experiencing. In the telic state, an individual's beliefs may prioritize diligence and discipline, whereas in the paratelic state, they may embrace beliefs that encourage creativity and exploration. Reversals between states have the potential to expose someone to different perspectives that, in turn, introduce new beliefs. Motivated reasoning and cognitive consistency may lead an individual to rationalize their shifting beliefs. Similarly, emotional associations with certain states may lead someone to adopt beliefs that are congruent with these emotions to help alleviate discomfort. Contextual and social influences are also at play. One's motivational state will vary based on the situation they are in and the influence of the people around them. This may result in the adoption of beliefs that one perceives as most conducive to the conditions of their settings or that align with the dominant group (Apter, 1984, 2001).

Emotions and Motivations

Emotions and reversal theory states are closely connected. The emotional aspects of the theory are similarly structured into opposites and consist of corresponding emotions for each set of motivational states. The most helpful example in the context of

organizational change might be how someone experiences arousal based on whether they are in the telic or paratelic mode. According to RT, there are four possible emotion outcomes, depending on one's underlying motivational state (Figure 1). Someone who is arousal-avoiding may feel anxiety as a negative emotion and relaxation as a positive emotion. In contrast, someone who is arousal-seeking may experience boredom as a negative emotion and excitement as a positive emotion. If one seeks to see progress on the goals of the organization but experiences the change as an obstacle, they are likely to experience the negative emotion of anxiety. This person may be less inclined to actively support the change initiative. Another individual may be more focused on the enjoyment of the moment at hand and tend to search for excitement in the change effort. This person may see the change as a way to avoid boredom and commit to championing the transformation. This idea sheds light on the idea that emotions are structurally connected to motivation, and the two work together to produce potential behavioral outcomes.

Figure 1

Reversal Theory and Emotions

Motivational States	CONFORMING	REBELLIOUS
TELIC	(-) anxiety (+) relaxation	(-) anger (+) placidity
OTHER	(+) excitement (-) boredom	(+) mischief (-) sullenness

Motivational States	MASTERY	SYMPATHY
SELF	(-) humiliation (+) pride	(-) resentment (+) gratitude
OTHER	(+) modesty (-) shame	(+) virtue (-) guilt

Note. Adapted from Apter (1991).

In addition to the structural features of emotions in the context of reversal theory, there is a functional aspect that helps to drive emotional regulation (Apter, 1991). If we continue to picture emotions as a scale (e.g., as relaxation – anxiety), imagine that each person has a preferred range of values where they are most comfortable with experiencing that emotion. Apter describes this as acting as a "homeostatic control system" for the individual, as they will tend to behave in such a way as to attempt to attain and maintain the value of the emotion within their preferred range. Emotions guide motivation as part of a cycle in which the emotion experienced is both an outcome of an

immediately preceding activity and the potential instigator of a new activity. In reversal theory terms, emotions are defined as “a subjective indicator of a substantial discrepancy or substantial congruence between the actual experienced level and the preferred level of felt arousal or felt transactional outcome” (Apter, 1991). Examination of each specific emotion arising from the motivational states adds a level of complexity that is beyond the scope of the exploratory nature of this study. As a result, I examined emotions in terms of their hedonic tone (i.e., the extent to which they are experienced in a pleasant or unpleasant manner (Apter, 1984, 1991). Positive and negative affect were captured via a generalized model using an overall measure of positive-negative affect. This approach represents a first step toward understanding how more specific emotions are related to motivational states in the context of organizational change.

Change-Supportive Behaviors

Although the definition of organizational change readiness has varied across models and changed throughout the years, change-supportive behaviors as an outcome have been upheld as a consistent commonality within the literature. T. G. Kim et al. (2011) define change-supportive behaviors as “actions employees engage in to actively participate in, facilitate, and contribute to a planned change initiated by the organization”. These behaviors may take many different forms, all of which involve varying amounts of effort and result in varying amounts of output. Herscovitch and Meyer (2002) attempted to organize these behaviors into three types: change compliance, change cooperation, and change championing. These behaviors range from reluctantly complying with the change to exerting energy and going along with the spirit of the change to demonstrating extreme enthusiasm and going above and beyond their job description for the change. This

configuration has allowed researchers to categorize these behaviors as outcomes for individual change readiness and antecedents to organizational outcomes (Rafferty & Minbashian, 2019). The model presented in this study echoes the sentiment of the previous models by including change-supportive behaviors as the core criterion. The relationship between change readiness and change-supportive behaviors has become deeply ingrained into the theory and a standard for measuring the effectiveness of models. In the words of Porras and Robertson (1992): "change in the individual organizational member's behavior is at the core of organizational change."

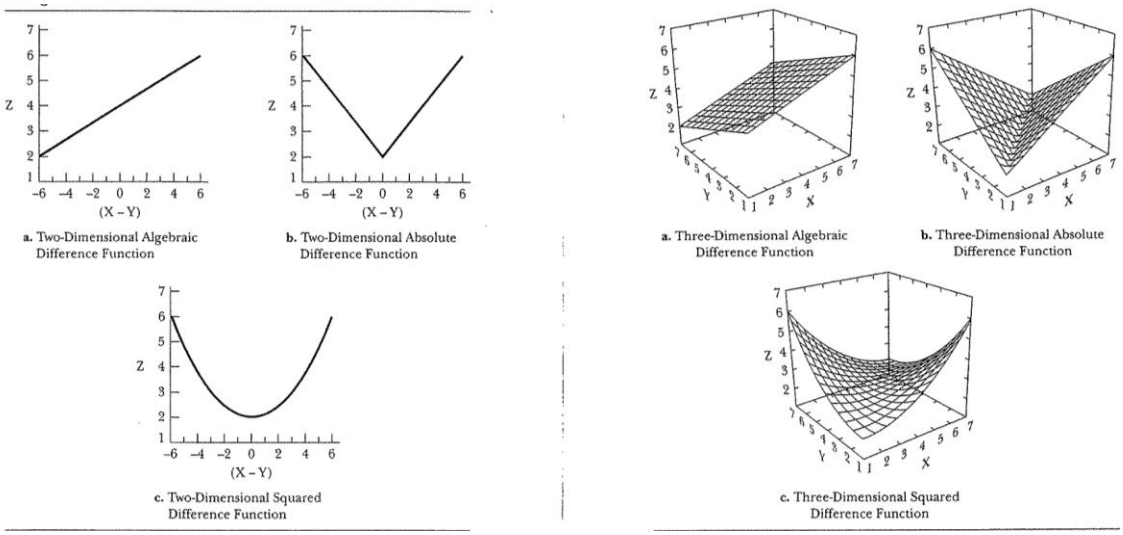
Congruence of Motivation and Beliefs

In the current study, I built on prior research by utilizing a recently proposed methodology from Humberg and colleagues (Humberg et al., 2022), building on work by Edwards (2002). This new approach begins with quantifying the degree of difference between individuals' motivations and the beliefs they have about the world around them using Edwards' congruence soring technique. Difference scoring as an approach to measuring congruency (i.e., similarity or agreement between constructs) has been a popular method among industrial-organizational psychologists for several decades. Some examples include the person-environment fit as an antecedent of attitudes, behavior, and well-being (Chatman, 1989; Edwards, 1991) and met expectations as a predictor of absenteeism, turnover, and organizational commitment (Porter & Steers, 1973; Wanous et al., 1992). Prior to congruence scoring, researchers often examined algebraic, absolute, or squared differences. These are problematic due to a number of methodological issues detailed by Cronbach (1958), Edwards (1994), and Johns (1981). The most concerning issue with difference scores is that they tend to be less reliable than the distinct constructs

from which they are derived. Difference scores are ambiguous by nature because they combine measures of distinctly different constructs into a single score. Historically, research has referred to the coefficient between the difference score and the outcome measure as the effect of congruence rather than the effects of each of the constructs that make up the difference score. Due to the reduction of constructs into a single coefficient, this method may suppress any substantial differences in the unique effects of the constructs (i.e., “want” may be more important than the “experience” but is not captured in the analysis because the difference score is just the combined effects of its components). This leads to constraints on the effects that are often ignored (e.g., one might assume that the effect of an increase in “want” is equivalent but opposite to the effect of an increase in “experience,” which is not necessarily true). Furthermore, difference scores may oversimplify the relationship between the two constructs and the outcome measure, reducing an inherently three-dimensional relationship to a two-dimensional relationship (Figure 2). This may distort the relationship and lead to incorrect conclusions about the observed relationship.

Figure 2

Two-Dimensional vs. Three-Dimensional Score Surfaces



Note. Comparison between two-dimensional functions and three-dimensional score surfaces. Adapted from Edwards, 2002.

For the purposes outlined in this study, I planned to utilize polynomial regression and response surface modeling to examine congruency (Edwards, 2002; Humberg et al., 2022). This approach is recommended for subjective data when the goal is to understand the nature of the relationship between "want" and "experience." This aligns with the aim of the current study, which is to examine the alignment or misalignment between motives and beliefs and how it relates to affective and behavioral outcomes. Edwards' (2002) pivotal article recommends a polynomial regression approach as an alternative to difference scores, as they address many of these concerns. Several researchers have since contributed to the development of this methodology over the past two decades (e.g., Edwards, 2007; Humberg et al., 2019; Schönbrodt, 2016). My analysis utilized these procedures to the extent they are currently developed to provide a nuanced and leading-edge approach to congruency scoring.

The Present Study

This study aims to begin filling the motivational gap within the current organizational change model by considering an individual's motivational state in conjunction with their beliefs. Previous instruments have failed to do so, thus disregarding a crucial antecedent of organizational change outcomes. The research involved the development of an instrument that captures all three psychological facets (motivation, beliefs, and emotions) and the examination of their distinct relationships with change-supportive behaviors. Subsequent analyses investigated the interdependencies between the facets and examined the incremental effects on change-supportive behaviors. Congruency between motivation and beliefs was assessed, as well as the magnitude and directionality of the congruency.

Hypotheses

The following hypotheses are depicted in Figure 3.

H1a-c. Direct effects of psychological factors on change-supportive behaviors:

a) Motivations are directly and positively related to change-supportive behaviors.
b) Beliefs are directly and positively related to change-supportive behaviors.
c) Affect is directly and positively related to change-supportive behaviors.

H2. Direct effects of (in)congruency on change-supportive behaviors:

For each motivational factor, congruency between an individual's motivations and beliefs is positively related to change-supportive behaviors, while incongruency is negatively related to these behaviors. The negative impact is stronger when motivations exceed beliefs.

H3. Direct effects of (in)congruency on affect:

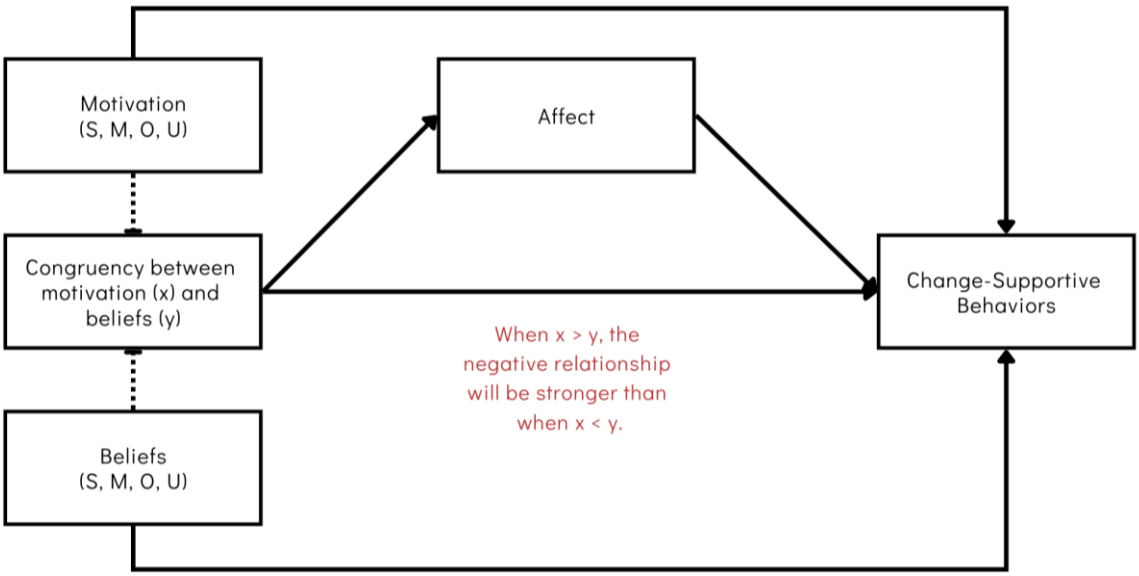
For each motivational factor, congruency between individuals' motivations and beliefs is directly and positively related to affect, while incongruency is directly and negatively related. The negative relationship is stronger when motivations exceed beliefs.

H4. Partial mediation of congruency, affect, and behaviors:

For each motivational factor, the relationship between the (in)congruency effect of motivations and beliefs with change-supportive behaviors is partially mediated by affect.

Figure 3

Model of Hypotheses



Note. Dotted lines represent an expected congruency effect, and solid lines represent an expected direct effect.

CHAPTER 3

METHOD

Participants and Procedure

The data for this study was obtained via survey responses collected from full-time working adults through an online research platform. Demographic information was collected to determine the representativeness of the sample and is only reported in the aggregate. Two separate samples were required for this study. Sample 1 provided the data used to perform the exploratory factor analysis. Data from Sample 2 data was used for all subsequent analyses. All participation was voluntary, and participants had the ability to withdraw from the study at any point without any penalty. Each participant was presented with an IRB-approved human consent form that informed them of their ability to opt out of the survey at any time and explained the confidentiality with which their data will be maintained. Upon completion of a survey, participants were redirected to the Prolific website to confirm their participation. I manually reviewed each submission to verify that the responses to their screener items matched their responses from the prior survey. Once their responses were deemed consistent and/or the participant had not reached out to amend any mistakes, I approved or denied the submission, and the user was compensated.

Sample 1

An examination of the literature on factor analysis reveals that there is no exact formula for determining sample size. Instead, the appropriate sample size depends on several components, such as the number of variables being analyzed, the number of items per factor, item communalities, study design, and the complexity of the model (Kyriazos, 2018; MacCallum et al., 1999). Generally, the consensus is that a larger sample size will be more stable and increase the generalizability of the results (Kline, 2016). Some researchers (Fabrigar et al., 1999; Hinkin, 1995, 1998) recommend a minimum of 200 participants as a general rule of thumb. Using this as a guide, I collected a sample size of 215 to be above 200 once inadequate responses were removed.

Sample 2

Sample 2 was used to conduct a confirmatory factor analysis and subsequently test congruency models on the latent factors. In accordance with Edwards' (2002) suggestions for determining sample size for congruency scoring and Kyriazos' (2018) synopsis of popular recommendations for confirmatory factor analysis, I considered several options. First, I assessed the heuristics for a CFA. Generally, a sample size of 200 is sufficient, particularly if the data is normally distributed and there are more than three items per factor. However, if there are a handful of items with low communalities, a sample of over 200 may provide more robust results (MacCallum et al., 1999). Next, I conducted a power analysis with G*Power to determine the smallest sample size that I would need for a multiple regression with nine predictors (one for each of the terms included in my polynomial regression) at $\alpha = .05$. and a statistical power of .80 (i.e., 80%; Cohen, 1988, 1992). The recommended sample size for this analysis was 103;

however, Humberg et al. (2022) recommend using a “substantially” larger number for asymmetric congruency models, as there is currently no heuristic or set of guidelines for this methodology. To achieve a compromise between historical heuristics and ambiguous modern methods, I aimed for a final sample size of 250. In anticipation of inadequate response patterns, my goal was to reach a minimum of 275 participants.

Online Data Sourcing

The measures were administered through an online survey platform, Qualtrics. Sample 1 participation was solicited through a web-based crowdsourcing platform, Prolific Academic (ProA). I chose to use ProA due to recent concerns around Amazon’s popular Mechanical Turk (MTurk) platform. Skepticism toward online panels, such as MTurk, has increased as the researchers fear that participants have become “professional survey-takers,” which may decrease the naivety of respondents. Studies have been done with the goal of addressing these concerns (Chandler et al., 2019; Douglas et al., 2023; Peer, Brandimarte, et al., 2017; Peer, Rothschild, et al., 2021). Researchers analyzed response rates, attention, reliability, reproducibility, non-naivety, dishonest behavior, participant overlap between platforms and usage patterns. Results across these studies have favored ProA over Mturk, as well as other panels such as CrowdFlower, CloudResearch, Qualtrics, and Dynata. Thus, Prolific Academic was deemed suitable for this study’s data collection.

Participant Compensation

Individuals in both samples were compensated for their time. Compensation was above the U.S. federal minimum wage ($7.25/hour) and in accordance with ProA’s suggested rate ($12.00/hour). For both sets of screener surveys, this payment was 20

cents per participant. Those from Sample 1 who qualified for the 40-item survey received $2.00, and those from Sample 2 who qualified for the 16-item survey received $1.00. Payment was not distributed to those who provided non-compliant or inattentive responses or did not complete the study.

Participant Screening

To reach the intended audience for Sample 1 and Sample 2, I used the built-in Prolific filter to only permit individuals to take the survey who met the following criteria: US-based, full-time employee, employed at a medium to large company, and speak English as their native language. I designed a short screener survey that was advertised to the filtered group to recruit participants who have experienced an organizational change in the last six months. Participants were provided with the definition of an organizational change and examples of how the change may manifest (e.g., structural changes: these involve changes in the organizational structure, such as mergers/acquisitions, reorganizations, or changes in reporting lines; technological changes: these involve the adoption of new technologies or processes, such as automation, new software, or updated equipment). The screener for Sample 1 was completed by 1,120 participants, and 464 individuals qualified for the full survey. Sample 2 data was gathered and screened using the same methodology. Participants from Sample 1 were disqualified from participating in Sample 2. There were 806 responses to the second screener, and 377 participants qualified for the final study.

Analytic Strategy

The following sections explain the development of the reversal theory-based measure of change readiness and the subsequent analyses to examine its relationship with change-supportive outcomes. The methodology consisted of two phases: Phase I, item development and exploratory factor analysis, and Phase II, confirmatory factor analysis and congruency scoring using polynomial regression and response surface methodology.

Phase I: Participant Summary for Sample 1

The full initial survey was sent to all qualifying individuals from the Sample 1 screener survey, with a cap set at 215 due to funding limitations. Participants were asked the same screening questions before being presented with the items. Those who did not provide the same answer as they had in the screener were ejected from the survey and were asked to return their submission. I analyzed the descriptive statistics of the 215 submissions to check for inattentive responders. One option for post-hoc assessment is to look at the answer patterns for each person and identify those with abnormal responses. It is possible that those with extremely low variance in their scoring may have chosen the same response for most or all of the items, and those with extremely high variance may have chosen response options completely at random. Both of these options suggest that the participant did not adequately read or respond to each item. In this scenario, I removed those whose standard deviation across the 40 items was greater than three standard deviations below the average standard deviation of the group. This captured anyone who responded with the same response to all 40 items or all but one item. The final sample consisted of 210 full-time employees with the following demographic statistics: gender: 55% male, 45% female; ethnicity: 74% white, 10% mixed, 9% Asian,

5% black, and 2% participants identified as “other”; age: the average age was 36, SD = 9.88 (two participants chose not to share their age with researchers). The sample provider requires paid users to be at least 18 years of age for legal and tax reasons.

The means across participants’ item response patterns on the 40 Likert-scale items were analyzed for normality. I took the average of each individual’s responses to the 40 Likert-scale items and then took the average of these means. The mean of means was 4.4, and the standard deviation of means was 1.0. The mean of standard deviations for each participant was 1.4, and the standard deviation of standard deviations was 0.5. Skewness and kurtosis metrics were analyzed according to H.-Y. Kim’s (2013) reference point for medium-sized samples ($50 \leq n < 300$) at absolute z-value ± 3.29, concluding the distribution of the sample is normal. Both the means and standard deviations for this sample were normally distributed and did not exhibit any problematic skewness or kurtosis. The means had a skewness of -0.538 ($z = 3.2$) and a kurtosis of 3.411 ($z = 1.1$). The standard deviations had a skewness of -0.064 ($z = -0.4$) and a kurtosis of 2.552 ($z = 1.4$).

The type of change experienced by each participant was captured as a multi-option, multiple-choice item. There were nine options for participants to choose from (Appendix III). Each change type had a brief explanation and corresponding examples to mitigate ambiguity and/or misinterpretation. This question served two purposes: to create a frame of reference around the change that the individual would be referring to throughout the survey and to examine the diversity of organizational change experienced by the participants. Ideally, there would be a reasonable amount of variation to avoid results that are biased toward a specific type of change. The distribution of responses to

this question was as follows: 43% experienced a structural change, 43% procedural change, 39% personnel change, 34% technological change, 27% operational change, 19% strategic change, and 15% financial change, 12% cultural change. Participants were allowed to choose more than one option, as changes don't always fall into one specific category. There were 27% of respondents who experienced only one of these types of organizational changes, followed by 33% who experienced two, 19% who experienced three, and 21% who experienced four or more different types (M = 2.6, SD = 1.6).

Data about how participants did (or did not) support the change were also collected using a single item. The twelve response options were anchored with a label and brief description. A short explanation of each option with examples was provided. Participants were allowed to choose more than one option in order to best represent the behaviors that they took part in. Only 12% of participants participated in just one type of change supportive practice, 15% participated in two types, 19% participated in three types, 15% participated in four types, 15% participated in five types, 10% participated in six types, and 14% participated in seven or more different types (M = 4.1, SD = 2.2). This item was exploratory in nature and was intended to capture potential differences between groups (i.e., those who did not support the change and those who did). However, there were not enough participants who did not support the change in any capacity to analyze for significant differences. The responses to the change support items were dispersed across the change initiative types, with most participants adapting their work practices to align with the change and the least number of participants actively advocating for the change. Only 5% did not support the change in any capacity (see Table 1).

Table 1

Change-Supportive Practices for Sample 1

Change-Supportive Practices	***% of Sample 1***
Adapting work practices: *Willingly modifying work processes, procedures, or behaviors to align with the change objectives and requirements.*	65%
Supporting colleagues: *Assisting and supporting colleagues in adapting to the change, sharing knowledge, or providing guidance during the transition period.*	57%
Embraced the change: *Actively accepting and embracing the new direction, goals, or strategies set by the change initiative.*	56%
Displaying a positive attitude: *Demonstrating a positive and open mindset toward the change, fostering a culture of optimism and resilience.*	53%
Providing feedback and suggestions: *Offering constructive feedback, suggestions, or ideas to improve the change implementation or address potential challenges.*	47%
Participating in change activities: *Actively engaging in change-related activities such as training sessions, workshops, team meetings, or cross-functional collaboration.*	43%
Collaborating with change leaders: *Actively collaborating with change leaders, managers, or change agents to facilitate the smooth implementation and success of the change initiative.*	27%
Contributing to change communication: *Participating in effective communication efforts by sharing relevant information, providing updates, or addressing concerns related to the change.*	23%
Taking ownership: *Assuming ownership and responsibility for implementing the change within one's own role or area of influence.*	19%
Advocating for the change: *Promoting and advocating the benefits and value of the change to colleagues, teams, or other stakeholders.*	12%
I did not support the change in any capacity.	5%
I did support the change, but in a different way than the examples listed.	1%

Phase I: Development of Initial Item Set

The initial set of motivation items for the Phase I instrument were developed using a deductive approach to scale development. This method utilizes existing theoretical definitions of a construct as a guide to creating items (Schwab, 1980). This requires extensive knowledge of the construct's body of work and is often the most appropriate approach when an underlying theory already exists (Getty & Thompson, 1994; Hinkin et al., 1997). To assess content validity, preliminary items for the scale were independently generated by my faculty advisor, a fellow graduate student, and me. Each person is tasked with generating items for each construct (i.e., the eight motivational states of reversal theory). Each item should reflect the importance of each factor in determining one's motivation to support a change. For example, the *telic* motivational state would encourage someone to support change efforts that allow the organization to reach its goals.

Although there is no strict rule for the number of items, researchers (Hinkin et al., 1997) argue that four to six items per construct may provide adequate internal consistency reliability. The authors recommend generating at least twice that many items with the expectation that approximately 50% of the original items will make it to the final scale. This scale is designed to measure eight different factors; thus, the target number of final items was 48. This required that I start with at least 64 initial items. Hoping to avoid a second round of item generation, we worked independently and generated 96 initial items.

Following the item generation, the research group met to discuss and rewrite or delete items that are poorly worded, too similar, or inconsistent with the intended

measurement goal (e.g., the item measures a belief rather than a motivation or the item measures at the organizational-level rather than at the individual-level). The final list of items was used to develop a content adequacy questionnaire, which was sent to a group of subject matter experts for review (Appendix II; Anderson & Gerbing, 1991; Schriesheim et al., 1993). This group consisted of twelve individuals with substantial research experience working with reversal theory. Each reviewer rated the item based on its consistency with the theory on a binary scale (0 for no, 1 for yes). A conservative interrater agreement of 75% or greater was required to keep the item (Hinkin, 1998; Hinkin & Tracey, 1999; Schriesheim et al., 1993). Of the items remaining, we retained the top five items for each factor. Thus, the initial set of items was reduced from 96 to 40. These 40 items comprised the initial survey for Phase I. The stem for each item was, "*How important was it that...?"* Responses were collected using a 7-point Likert-style scale (Likert, 1932; Lissitz & Green, 1975) from *not at all important* (1) to *extremely important* (7). An example of an item measuring telic motivation is: "*How important was it that... **the change would allow the organization to reach its goals?**"* The final 40 items were presented to each participant in random order.

Phase I: Examination of Responses to 40-Item Survey

Once the items were developed, examined, and administered to Sample 1, I evaluated each item's performance. First, I inspected the correlation matrix to determine the extent to which the items are intercorrelated (i.e., the items share a common latent variable; DeVellis, 2016). In line with J. Kim and Mueller's (1978) recommendation, I evaluated the interitem correlations of each item against the criteria for deletion of less than 0.4. None of the 40 items met this threshold for deletion.

The descriptive statistics (means and standard deviations) for the remaining 40 items were examined. DeVellis (2016) suggests relying primarily on correlational patterns for gauging potential item value but explains that means and variances are helpful in double-checking the items for further context. They maintain that scales should have relatively high variance and means close to the center of the range (i.e., around four on a 7-point scale). Table 2 displays the means and standard deviations of each item. A majority of the item means were within one standard deviation of the total mean, and zero of the items were outside two standard deviations. The variance across the Likert-scale items was relatively stable, with all but six falling within one SD of the total SD and the rest within two SD. Further tests of data suitability for factor analyses are described in the following section.

Table 2

Item Means and Standard Deviations for Sample 1

Item	***Mean***	***SD***
C1	4.629	1.644
C2	4.700	1.689
C3	4.238	1.747
C4	4.795	1.474
C5	3.810	1.905
OM1	4.733	1.591
OM2	4.286	1.684
OM3	4.986	1.618
OM4	4.743	1.590
OM5	4.667	1.650
OS1	4.148	1.661
OS2	4.100	1.778
OS3	4.143	1.747
OS4	3.848	1.693
OS5	4.481	1.695
P1	3.881	1.703

Item	***Mean***	***SD***
P2	4.281	1.701
P3	3.776	1.692
P4	2.462	1.474
P5	2.933	1.627
R1	3.971	1.728
R2	4.438	1.725
R3	4.214	1.688
R4	3.900	1.715
R5	3.852	1.715
SM1	4.343	1.873
SM2	5.105	1.654
SM3	4.071	1.674
SM4	4.700	1.672
SM5	4.814	1.697
SS1	3.914	1.841
SS2	3.890	1.815
SS3	3.981	1.835
SS4	4.090	1.760
SS5	3.881	1.861
T1	5.576	1.486
T2	5.538	1.451
T3	5.648	1.474
T4	5.329	1.384
T5	5.500	1.491
Mean	4.360	1.672
SD	0.667	0.123

Note. All items were measured using a scale from 1 to 7.

To determine the dimensionality and reliability of the scales, the next step was an exploratory factor analysis (EFA) with Sample 1. This was followed by a confirmatory factor analysis (CFA) to confirm the structure identified via the EFA with responses from a different set of individuals (Sample 2).

Phase I: Exploratory Factor Analysis

EFA procedures aim to (1) establish the number of latent variables that exist in a set of items, (2) condense the items needed to account for each variable, (3) reveal the underlying meaning and/or content of the latent variables, and (4) identify items' individual performance in a scale (DeVellis, 2016). I chose to implement an EFA rather than a principal component analysis (PCA), as the main interest of this part of the study was to reveal the latent constructs that may exist beneath the expected eight factors and how they contribute to the variance explained and not to merely reduce the number of items (Hinkin, 1998).

Tests of Sample Adequacy

Prior to conducting the EFA, the suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA; Kaiser, 1970, 1974) and Bartlett's Test of Sphericity (Bartlett, 1941, 1951). The KMO test considers values between 0.8 and 1 as indicative of adequate sampling for factor analysis. All 40 of the reduced set of items met this criterion, with a range of 0.84 to 0.97 and an overall MSA of 0.92. Bartlett's Test of Sphericity analyzes the items to check whether the correlation matrix of the data significantly differs from that of an identity matrix. An identity matrix would indicate that the variables are unrelated and, therefore, unsuitable for detecting a latent structure. A *p*-value of less than 0.05 represents a statistically significant difference between the two matrices. The results of this test were significant, with a *p*-value of 0.000009. The outcomes of both preliminary tests indicate that all 40 of the items in the reduced-item set are suitable for a factor analysis.

Factor Extraction

To carry out the EFA, I utilized the *psych* package in R (Revelle, 2024). This package allows the user to customize the factor extraction method, rotation method, and number of factors to retain. For the factor extraction method, I used principal axis factoring (PAF). This is considered the ideal method for analyzing latent constructs (Ford et al., 1986; Rummel, 1988). The PAF method focuses on analyzing shared variance among variables and accounts for the unique variance and error associated with each variable. This is useful for the psychological context because we assume that our variables will also be influenced by underlying factors and measurement error or unique factors specific to each variable. An orthogonal rotation method was utilized to uncover the data's "simple structure" (Thurstone, 1947). A solution of simple structure is exhibited when each factor contains a set of measured variables that load highly onto that factor and load to a lesser extent on the rest of the factors. Rotation methods aim to do this by maximizing the variance of squared loadings on a factor to produce a range of loadings. The orthogonal rotation method assumes that factors are unrelated. This assumption is useful in multi-factor scale development, as the goal is to develop factors that are "reasonably independent of one another" (Hinkin et al., 1997). For this reason, orthogonal rotations are typically recommended in EFA practice. The most common orthogonal rotation is the varimax rotation, and it has been considered the best of its type (Fabrigar et al., 1999). For good measure, an oblique rotation (using a promax rotation) was analyzed and revealed the same factor structure with similar variance explained.

Factor Retention

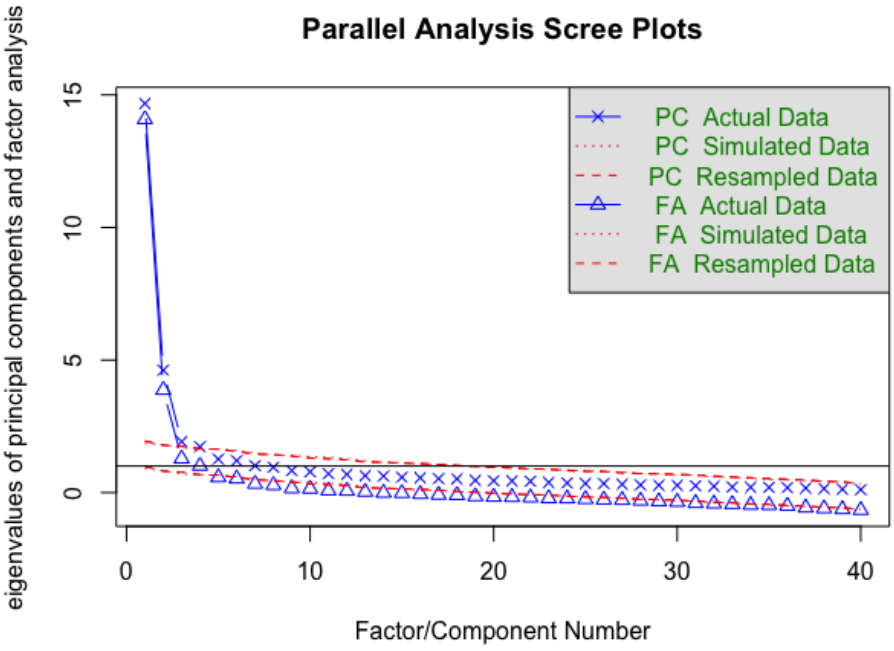
To identify the optimal number of factors, I started by examining the eigenvalues. Commonly, a scree test is used to find the natural break in successive eigenvalues (Cattell, 1966). The scree is the point on the curve where it becomes horizontal and begins to plateau. The number of points above the scree are considered to be defensible factors, whereas the points below are considered to be factors due to error. The plot for this analysis appeared to indicate a break at a four-factor solution, but it was too close to call visually. This is a common disadvantage of using a subjective method such as the scree test (Hinkin, 1998). An alternative or supplemental technique, "parallel analysis," compares the scree of the factors of the observed data with that of a random data matrix of the same size (DeVellis, 2016; Horn, 1965; Humphreys & Montanelli, 1975). This method is often preferred over the simple scree test because it is more objective and accurate than a simple scree plot visual inspection or just retaining eigenvalues greater than one (Conway & Huffcutt, 2003; Fabrigar et al., 1999).

Parallel analysis compares real data with random data, which helps to identify a meaningful factor structure rather than what could be explained by random noise. In R, I conducted a parallel analysis that compares the optimal factor count and component counts using factor analysis and principal components methodology. This function compares actual data with resampled and simulated data to provide eigenvalues and suggestions based on the point where the number of factors with eigenvalues is greater than the eigenvalues of random data. Both the principal components and factor analysis suggested that four factors/components would capture the most amount of variance (Figure 4). This structure was not expected nor surprising, considering that there are four

pairs of motivational constructs within the items. The fourth factor just barely made the cut, but factor analysis researchers maintain that it is better to overestimate the number of factors rather than underestimate them (Hinkin, 1998). Based on the preceding statistical tests and theoretical interpretations, four factors were retained.

Figure 4

Results of Parallel Analysis



Item Deletion

Aiming for parsimony and simple structure, I retained items that most distinctly represent the underlying constructs. Ford et al. (1986) recommend using 0.40 as the criterion level for determining whether the item's factor loading is meaningful. Additionally, I checked for items that loaded at more than half of their dominant loading factor onto another factor. Lastly, I reevaluated the correlation matrix to identify interitem correlations at .70 or above to minimize redundancy and encourage a

parsimonious configuration. Items that failed to meet these requirements and did not have strong theoretical support to be retained were deleted from the dataset, and the EFA was repeated. The resulting factor structure explained the highest possible percentage of total variance while maintaining theoretical justification (Ford et al., 1986; Getty & Thompson, 1994; J. Kim & Mueller, 1978). Theoretical considerations are explained in further depth later in this section.

Communality statistics were utilized to determine the extent to which the variance in the subscale is explained by each of the remaining items. There is no hard and fast rule for excluding items based on communality, with researchers suggesting 30% as an acceptable rule of thumb at the item level and 60% at the scale level (Hinkin et al., 1997). Two conforming items approached but did not reach the suggested 30% communality threshold (items C2: 29% and C5: 27%) but were retained based on theoretical grounds. Removing them would result in zero conforming items and would have significantly weakened the entire model. Successful scale development relies on a balance to be struck when deleting items in the EFA process. There are theoretical considerations, statistical criteria, and model stability that must be included when deciding on a stopping point. The factor structure was the most theoretically meaningful and statistically robust after the removal of the lowest-performing items (Figure 5; Table 3).

Figure 5

Final Factor Model

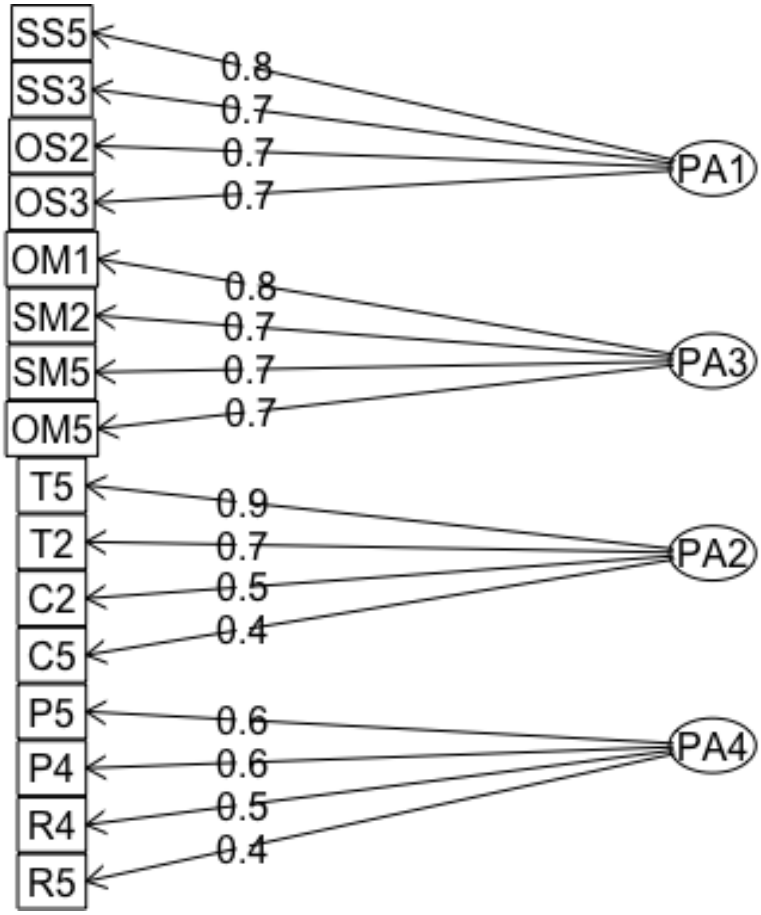


Table 3

Results of Factor Analysis

Questionnaire Item	***Original RT Factor***	***I***	***II***	***III***	***IV***
Factor 1: Sympathy					
OS2: … the change helped others feel more appreciated as a person?	OS	0.69	0.24	0.14	0.22
OS3: … the change improved relationships between coworkers?	OS	0.66	0.25	0.11	0.20
SS3: … the change would help me feel more appreciated as a person?	SS	0.75	0.20	0.04	0.17
SS5: … the change would make me feel the organization truly cares about me?	SS	0.78	0.27	0.05	0.20
Factor 2: Mastery					
OM1: … the change helped in training others' proficiency at work?	OM	0.23	0.76	0.19	0.18
OM5: … the change helped others improve their skills on the job?	OM	0.34	0.67	0.24	0.15
SM2: … the change helped me succeed in my job?	SM	0.25	0.74	0.07	0.17
SM5: … the change would increase my performance at work?	SM	0.24	0.71	0.15	0.15
Factor 3: Order					
C5: … the change honored the organization's traditions?	C	0.26	0.07	0.45	0.11
C2: … my boss supported the change?	C	0.12	-0.04	0.48	0.17
T2: … the change would help the organization to achieve its goal?	T	-0.06	0.35	0.69	-0.01
T5: … the change supported the goals of the organization?	T	-0.06	0.24	0.87	0.03
Factor 4: Unorthodoxy					
P4: … the change would be entertaining?	P	0.32	0.15	-0.02	0.60
P5: … the change would be fun?	P	0.38	0.21	-0.01	0.63
R4: … the change would break free from organization's usual norm?	R	0.10	0.15	0.38	0.53
R5: … the change would challenge the status quo?	R	0.08	0.13	0.30	0.45

Note. N = 210. OS = Other-Sympathy; SS = Self-Sympathy; OM = Other Mastery; SM = Self-Mastery; C = Conforming; T = Telic; P = Paratelic; R = Rebellious. Item numbers based on the original questionnaire.

In addition to examining the statistical qualities of the results, I also assessed the factor loadings to determine whether the structure was sound based on the underlying theoretical framework and its constructs. The results revealed a clear four-factor structure that differed from the expected 8-factor solution yet was clearly interpretable and consistent with reversal theory. Using the 16-item scale (i.e., after removing poorly loading items), the same structural pattern as the first iteration emerged. The four transactional states aligned themselves into two pairs (one self-and other-mastery factor and one self-and other-sympathy factor), and the two somatic pairs did so as well (one telic and conforming factor and one paratelic and rebellious factor). This latent structure was consistent with how one might expect motivational states to be expressed in an organizational context. Telic and conforming items loaded onto the same factor, which makes sense when one considers the norms of the change efforts in the workplace as inherently goal-focused and rule-based. Paratelic and rebellious items loaded onto the final factor, which may represent the desire to make change efforts more interesting by departing from perhaps over-used established practices and injecting novelty into change tactics.

Internal Reliability

Prior to finalizing and labeling the four resulting factors, I assessed the performance of the subscales by looking at the internal consistency of each factor. Internal consistency helps to determine the extent to which the items are measuring the same expected construct (Nunnally & Bernstein, 1994). The most accepted measure of internal consistency is Cronbach's alpha (Cronbach, 1951; Price & Mueller, 1986). This measure demonstrates the strength with which the items load onto each factor on a scale

from 0 to 1. A coefficient alpha of 0.70 or higher is typically considered strong for new, unidimensional measures (Nunnally, 1978). All four factors passed this threshold and were labeled as follows: (a) Sympathy: Four items assessing self-sympathy and other-sympathy ($\alpha = 0.92$); (b) *Mastery:* Four items assessing self-mastery and other-mastery ($\alpha = 0.92$); (c) *Order:* Four items assessing telic and conforming ($\alpha = 0.87$); and (d) *Unorthodoxy:* Four items assessing paratelic and rebellious motivations ($\alpha = 0.75$).

Phase II: Participant Summary for Sample 2

The final survey developed in Phase I was sent to the 377 qualifying individuals in Sample 2, with a cap set at 280 completions. I followed the same procedures as the previous phase in this study by having participants re-complete the screener questions and asking those who gave differing responses to return their submissions. Cases were analyzed and removed based on three procedures to identify inattentive responders and multivariate anomalies. The first test assessed each participant's standard deviation across all 32 Likert-scale items. There was one case (SD = 0.18) that landed three standard deviations outside of the group's average, which is equivalent to answering only one item differently than the rest. The second test assessed completion duration across participants. Researchers tend to agree that simple attitude questions take between 1.4 and 2 seconds, whereas complex attitude questions take between 2 and 2.6 seconds, and demographic or consent items may be completed even faster (Curran, 2016). This is especially true for those with experience taking web surveys (Yan & Tourangeau, 2008). This study required responses to 38 items: 1 consent item, 1 Prolific ID item that was designed to fill automatically based on their URL, two screener items, and 34 simple attitude items. Based on the aforementioned studies, I determined that 90 seconds would

be the minimum time needed to complete the survey. Only one case was deleted due to quick completion at 89 seconds. Finally, I used Mahalanobis distance to detect multivariate outliers (X^2 = 62.487, df = 32, p < 0.001; Tabachnick et al., 2013). Ten participants' distance scores exceeded the threshold and were removed from the sample.

The final sample for Phase II consisted of 268 full-time employees. Details on demographic and other characteristics are shown in Table 4. The average age of respondents was 37.50, and the SD was 10.53. Gender was nearly half male and half female. The majority of participants were white and worked for a company with at least 1000 employees. Participants were provided one or more of the eight options from which to choose (definitions are provided in Appendix III). Based on responses to the screener items, 47% of participants experienced only one type of organizational change in the last six months (M = 2.1, SD = 1.4). The most popularly experienced change types were those regarding structural (47.76%) or personnel (46.64%) changes. The screener items assessed the types of organizational change that were experienced.

Table 4

Sample 2 Demographic Group Breakdown

Category	***Group***	***Percentage***
Age	20-29	23.9%
	30-39	41.0%
	40-49	20.1%
	50-59	10.8%
	60-69	3.4%
	70+	0.8%
Ethnicity	Asian	13.8%
	Black	8.2%
	Mixed	5.6%
	Other	2.6%
	White	69.8%
Gender	Female	50.7%
	Male	48.9%
	Prefer not to say	0.4%
Company size	250-999	25.0%
	1000+	75.0%
Type of change	Structural	47.8%
	Technological	35.1%
	Procedural	31.0%
	Personnel	46.6%
	Cultural	5.6%
	Strategic	13.1%
	Operational	16.8%
	Financial	12.3%
Number of change types	1 type	47.4%
	2 types	22.4%
	3 types	16.8%
	4 or more types	13.4%

The means across participants' Likert-scale item response patterns were normally distributed and did not exhibit any problematic skewness or kurtosis metrics according to H.-Y. Kim's (2013) reference point for medium-sized samples ($50 \leq n < 300$) at absolute

z-value ± 3.29, conclude that the distribution of the sample is normal. The mean of means was 3.6, and the standard deviation of means was 1.1 with a skewness of 0.145 (z = 1.0) and kurtosis of 2.820 (z = -0.7). The mean of standard deviations was 1.6, and the standard deviation of standard deviations was 0.5, with a skewness of -0.068 (z = -0.5) and a kurtosis of 2.980 (z = -0.1). The slider items on the 100-point scale measuring affect and change behaviors were also normally distributed. The mean of affect scores was 47.1, and SD was 26.3 (participant breakout in Table 5).

Table 5

Summary of Participants Across the Affect Item (A1)

Anchor	***Level of Affect***	***Range***	***Percentage***
Feeling completely overwhelmed and anxious, fearing job loss or significant negative impacts on daily work. This might include strong resentment towards the change, feeling helpless or hopeless about the future, or experiencing intense stress and frustration.	Extremely Negative	0-20	20.10%
Feeling uneasy or skeptical about the change, with concerns about its necessity or potential outcomes. This might include discomfort with the new direction, minor anxiety about adapting to new processes, or feeling mildly disengaged.	Moderately Negative	21-40	18.70%
Having mixed feelings or a wait-and-see attitude. This might include being unsure about the change's impact, neither strongly opposed nor in favor, or feeling that the change doesn't significantly affect one's own role.	Indifferent	41-60	26.90%
Feeling cautiously optimistic or mildly supportive of the change. This could include a belief that the change might bring about some improvements, willingness to give it a chance, or a sense of mild enthusiasm about new opportunities.	Moderately Positive	61-80	25.00%
Feeling highly enthusiastic and supportive of the change. This includes a strong belief in the benefits of the change, feeling energized and motivated by the new direction, or experiencing a sense of renewal and excitement.	Extremely Positive	81-100	9.33%

The mean of change-supportive behavior scores was 59.3, and the standard deviation was 20.7 (participant breakout in Table 6). Each item's descriptive statistics may be found in Table 7.

Table 6

Summary of Participants Across the Behavior Item (B1)

Anchor	***Change behavior***	***Range***	***Percentage***
Demonstrating opposition in response to a change by engaging in overt behaviors that are intended to ensure that the change fails.	Active Resistance	0-20	5.2%
Demonstrating opposition in response to a change by engaging in covert or subtle behaviors aimed at preventing the success of the change.	Passive Resistance	21-40	11.2%
Demonstrating minimum support for a change by going along with the change but doing so reluctantly.	Compliance	41-60	33.2%
Demonstrating support for a change by exerting effort when it comes to the change, going along with the spirit of the change, and being prepared to make modest sacrifices.	Cooperation	61-80	39.2%
Demonstrating extreme enthusiasm for a change by going above and beyond what is formally required to ensure the success of the change and promoting the change to others.	Championing	81-100	11.2%

Table 7

Summary of 16-Item Survey

Item	***n***	***mean***	***sd***	***median***	***min***	***max***	***skew***	***kurtosis***
C2	268	4.5	1.8	5	1	7	-0.49*	-0.79
C5	268	3.7	1.7	4	1	7	-0.08	-1.06*
OM1	268	4.5	1.8	5	1	7	-0.65*	-0.46
OM5	268	4.6	1.7	5	1	7	-0.83*	-0.13
OS2	268	3.9	1.9	4	1	7	-0.22	-1.12*
OS3	268	4.0	1.8	5	1	7	-0.38	-0.99*
P4	268	2.2	1.5	2	1	7	1.21*	0.44
P5	268	2.4	1.6	2	1	7	0.85*	-0.44
R4	268	3.6	1.8	4	1	7	-0.05	-1.17*
R5	268	3.5	1.8	4	1	7	0.15	-1.07*
SM2	268	4.9	1.8	5	1	7	-0.94*	-0.12
SM5	268	4.6	1.8	5	1	7	-0.76*	-0.34
SS3	268	4.0	1.9	4	1	7	-0.22	-1.13*
SS5	268	4.0	1.9	4	1	7	-0.18	-1.14*
T2	268	5.4	1.5	6	1	7	-1.08*	0.78
T5	268	5.2	1.5	5	1	7	-0.93*	0.44

Note: * indicates a significant case of skewness or kurtosis based on H.-Y. Kim's (2013) z-score approach for medium-size samples ($50 \leq n < 300$), utilizing a cutoff point at $\alpha = 0.05$ (absolute z-value ± 3.29)

Phase II: Examination of Responses to 16-Item Survey

The final 16 items that were retained following the EFA were administered to Sample 2 in their original form (i.e., measuring motivation). The items were also coupled with a new stem to assess beliefs, the cognitive component of change readiness. The supplemental questions aimed to reveal the extent to which the participant felt that they experienced the motivational state in the item; for example, "*How important was it that... **the change would allow the organization to reach its goals?**"* would have the matching item, "*To what extent did... **the change allow the organization to reach its goals?**"* This was captured so that congruency between each participant's motivations and beliefs

around the change could be understood in terms of its relationship with affect and change-supportive behaviors. The 16 motivation versions of the items were presented as a block, as were the 16 belief versions of the items. Items within each block were randomized, as was the order in which each block was presented. Both sets of items were utilized in subsequent analyses.

The descriptive statistics were analyzed for each motivation item from Sample 2, with the mean of item means being 4.1 and the standard deviation of item means being 1.7. Based on their non-standardized skewness and kurtosis scores, six items appeared to be moderately skewed (OM1, OM2, P5, SM2, SM5, T5; absolute value of skew was between 0.5 and 1), and two items were highly skewed (P4, T2; greater than 1). A further look at their skewness and kurtosis utilizing H.-Y. Kim's (2013) z-score approach showed that nine items had a problematic skewness and seven items had problematic kurtosis. The Shapiro-Wilk test of normality was analyzed for each item and revealed that all 16 items rejected the null hypothesis that the data are normally distributed, indicating a nonnormal distribution ($p < 0.05$). Finally, Mardia's test for multivariate normality indicated that the distribution of the motivation items had significant skewness (M = 1568, $p < 0.05$) and kurtosis (M = 12.8, $p < 0.05$). A full table of descriptive statistics for each item may be found in Table 7 and figures for each distribution are located in Appendices VII and VIII.

Phase II: Confirmatory Factor Analysis

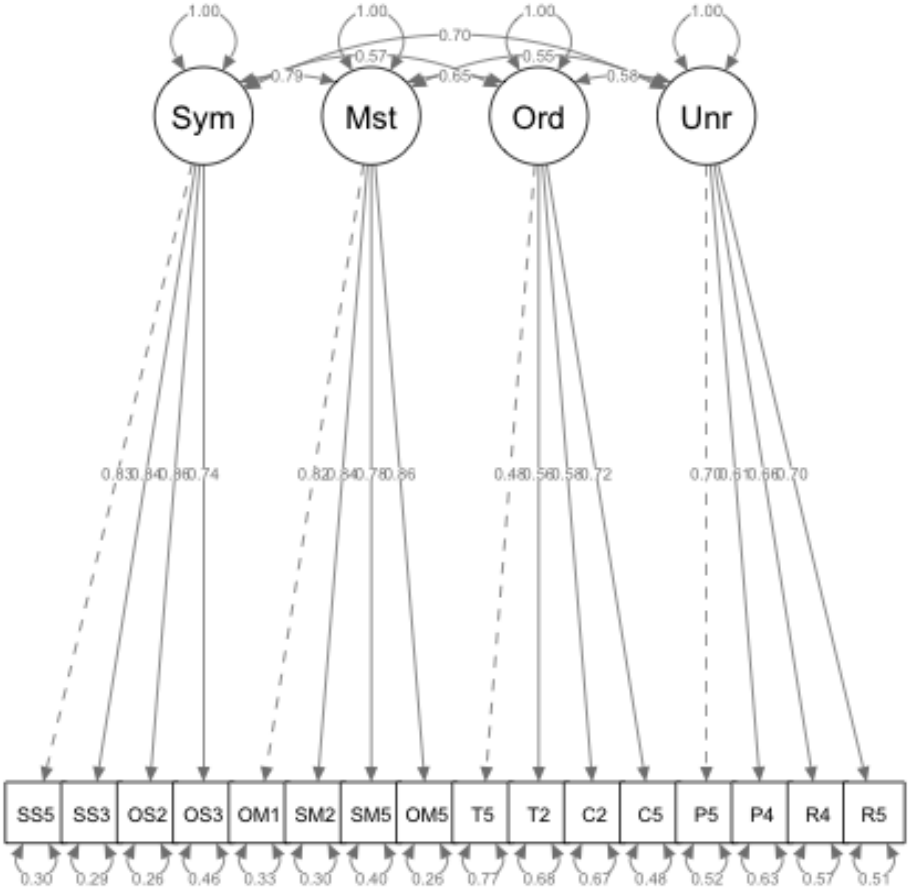
To further assess the structure of the new instrument, I carried out a confirmatory factor analysis (CFA) in R using the Lavaan package (Rosseel, 2012). CFA is a type of structural equation modeling (SEM) that is often used in scale development as a way to

examine the quality of the factor structure (Hinkin, 1998). It is different from exploratory factor analysis (EFA) in that it allows the researcher to specify the model based on a priori hypotheses (Brown, 2015). These specifications include the number of factors in the model and the specific items that are expected to load onto each factor. In order to appropriately compare the results of my CFA with my EFA, I performed the CFA on the 16 retained items in the context of important motivations.

I intended to use the maximum likelihood (ML) method for estimating the factor model. ML is the most common estimation method used in CFA, as it is able to evaluate the extent to which the factor solution can reproduce the relationships found in the data (Brown, 2015). However, ML is prone to major errors if the following assumptions are not met: (1) sufficient sample size, (2) the indicators are measured on continuous or approximate-level data, and (3) multivariate normality. As indicated above by each item's skewness and kurtosis, there was significant nonnormality across the motivation items. In the case of nonnormal Likert-scale data, organizational researchers have recommended using diagonally weighted least squares (DWLS) estimation procedures (Finney & DiStefano, 2006; Hutchinson & Olmos, 1998). The DWLS estimator was explicitly designed to analyze ordered categorical and other nonnormal variables (Jöreskog & Sörbom, 1996). DWLS only uses the diagonal of the weight matrix, which reduces the impact of measurement errors and distributional issues on the estimation process without having to compute the large weight matrix associated with WLS (Nye & Drasgow, 2011). It is often preferred over weighted least squares (WLS) due to its ability to reduce the computation required to obtain a factor solution (Figure 6).

Figure 6

Confirmatory Factor Analysis Results



The results of the CFA were strong, with factor loadings between 0.48 and 0.86, with an average magnitude of 0.64. Each of the loadings were significant, indicating that each observed variable is a good measure of its corresponding latent factor. All four of the factors were positively and significantly related. I allowed the Sympathy and Mastery factors to covary within my model because they both share a common underlying construct (i.e., the Self- and Other-oriented pair of motivations).

To assess the results of the overall structure of a CFA, researchers will evaluate the output across an array of fit indices (Brown, 2015; Hu & Bentler, 1998). Each index

is designed to describe how well the data fits the model by capturing different aspects of the model. For example, the X^2 and the Standardized Root Mean Square Residual (SRMR) are both examples of absolute fit indices, which aim to evaluate the reasonability that the input and the predicted output are equal. The Root Mean Square Error of Approximation (RMSEA) is a type of fit that adjusts for model parsimony by incorporating penalties for poor model parsimony based on the hypothesized model's parameters. Comparative fit indices, such as the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI), evaluate the model's fit in comparison to a baseline model where all of the covariances are fixed to zero. Because all of these indices capture different components, it is common for researchers to check each one's results in order to draw an overall conclusion about the model (Brown, 2015). There are no strict cutoffs for each index, as it depends on the estimation method utilized in the model. There are common thresholds that researchers generally adhere to, but many of them are rooted in ML and are prone to interpretation error when used to assess models developed using different estimation methods (Brown, 2015; Nye & Drasgow, 2011).

DWLS requires consideration of the unique characteristics of a given model (e.g., sample size, number of items, number of response options, response distribution type, average factor loading, and the number of factors) to develop more accurate cutoff scores, which are commonly calculated using Nye and Drasgow's (2011) regression formulae. To find the appropriate cutoff threshold for the current model using this regression method, I utilized the R Code developed by Groskurth et al. (2023). The code plugs each condition of my model into the regression equations to create a weighted sum of the characteristics and uses it to predict a cutoff score for the X^2, X^2/df, RMSEA,

SRMR, and CFI. A cutoff score for the TLI was not established but is generally expected to be approximately similar to the CFI, neither of which is recommended for the interpretation of DWLS models because they have been shown to have substantial Type II error rates under this condition (Nye & Drasgow, 2011). Due to this, I relied more heavily on the rest of the recommended fit indices for interpreting the current model. The following common fit indices are reported in Table 8: X^2 GOF (Goodness of Fit) statistic, RMSEA, SRMR, and CFI. The table includes columns for the popular cutoff scores based on ML, as well as the ones that were developed specifically for my DWLS model. All of the resulting index scores exceeded the expectations of both the ML and DLWS recommendations, indicating a good model fit.

Table 8

CFA Fit Indices and Heuristics

Fit Index	***ML Recommendation***	***DWLS Recommendation***	***RESULT***
X^2 GOF	Small X^2; $p > .05$	<= 212.87	98
X^2 / *df*	Not established	<= 4.20	1.51
RMSEA	<= 0.06	<= 0.15	0.04
SRMR	<= 0.08	<= 0.17	0.07
TLI	>= 0.95	Not established	0.99
CFI	>= 0.95	>= 0.94	0.99

Note. Adapted from Brown (2015) and Nye and Drasgow (2011).

Phase II: Congruency Scoring

Polynomial regression in the context of congruency scoring has three guiding principles and three main assumptions (Edwards, 2002). The first principle is that congruence is not viewed as a single score (i.e., not a simple difference score) but rather as the association between the component measures in a two-dimensional space. If one thinks of perfect congruence as a line along which the two measures align, then

incongruence can be represented by the perpendicular distance from the line. This reduces the chances of oversimplifying the relationship between the two constructs by capturing both the magnitude and direction of incongruence. The second principle introduces the outcome variable into the equation. The idea is that the effect of congruence on an outcome should be treated as a three-dimensional surface relating the two distinct components and their joint effects on the outcome. This is achieved through complex response surface methodology (RSA), which is explained further later in this section. Lastly, the third principle asks that researchers not impose the constraints associated with difference scores on the data but to treat them as a hypothesis to test empirically rather than treat them as a limitation. For example, the constraint imposed by a difference score is the implication that both components of interest have equal but opposite effects on the outcome. Without testing for this constraint and comparing the outcome with that of the polynomial model, there is not enough empirical evidence to infer that congruence effects exist and that the result isn't due to an equal and opposite effect. Testing the constraints of the algebraic difference scores as part of the hypothesis allows one to build support for the effects of the nonlinear conceptualized model.

The first assumption of polynomial regression maintains that component measures should be "commensurate" (Edwards, 2002), which means they measure the same content domain. This ensures conceptual relevance between the components and allows researchers to meaningfully interpret the congruence results. The second assumption requires that both components use the same numeric scale; otherwise, it is impossible to adequately determine the degree of correspondence between them or compare their coefficients. Lastly, the polynomial regression approach retains the general

regression assumptions that all measures are interval or ratio and there is no measurement error within the component measures (Pedhazur, 1997). In social science research, the assumption of measurement error is rarely achieved, but the risk can be mitigated with high-reliability measures and structural equation modeling estimating latent variables (Bollen, 1989; Jöreskog & Sörbom, 1996).

In this study, each participant self-reported their motivations and beliefs about their change experiences across each of the sixteen items identified through the earlier factor analyses. In this context, the question of importance reflects "what they want" in terms of the motivational states, while the question of experience reflects the level to which they perceived the motivational state as reality and represents "what they got." Analyzing the alignment between what one wants and what one gets provides greater insight into how employees conceptualize organizational change in the context in which it emerges, even more so than when these predictors are investigated in isolation or combined into a single interaction term (Edwards, 2002).

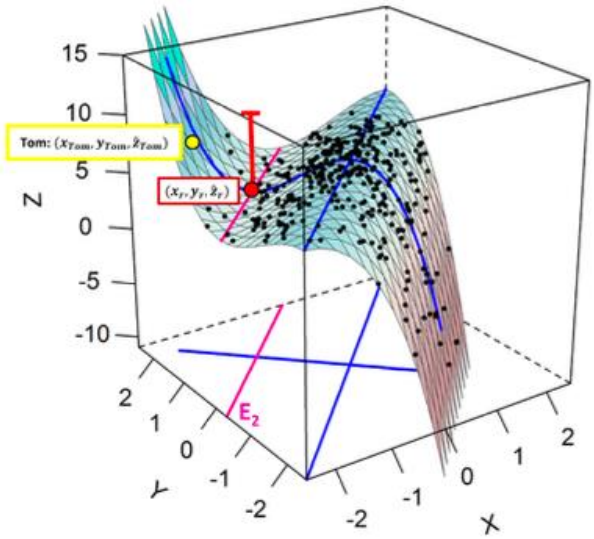
In this study, I utilized the polynomial regression methodology through a confirmatory lens. This is the recommended approach when the model is hypothesized *a priori* (Edwards, 2002). Because I expected that incongruency would have a more dramatic effect on the outcome when the "importance" (x) exceeds the "experience" (y) than when the "experience" (y) exceeds the "importance" (x), I adopted Humberg et al.'s (2022) strict asymmetric congruence model. This type of model describes a hypothesis where predictors are expected to have an unequal effect based on directionality (e.g., $x > y$ is associated with a lower outcome than $x < y$). The corresponding response surface approach for this model differs from that of Edwards (2002) in that it allows for

asymmetric magnitude as well as asymmetric directionality, which is critical to my hypothesis, by removing the linear terms and adding a cubic term.

The congruency for each pair of items was calculated using a cubic polynomial regression equation to model the relationship between the two measures as predictors. This equation includes both squared and cubed terms to examine the non-linear effects of each predictor on the outcome and the direction of the discrepancy between the predictors. The strict asymmetric congruence equation is pictured in Figure 7 and calculated as shown in Eq. 1 (Humberg et al., 2022). The ensuing equations and statistical interpretation of this methodology should be conceptualized with the following variable classifications: *x* = motivations ("importance"), *y* = beliefs ("experience"), and *z* = change-supportive behaviors.

Figure 7

An Example of a Strict Asymmetric Congruence Model



Note. Adapted from Humberg et al. (2022).

$$
\begin{aligned}
z &= c_0 + c_1(x-y)^2 + c_2(x-y)^3 + \varepsilon \\
&= c_0 + 0x + 0y + c_1x^2 - 2c_1xy + c_1y^2 + c_2x^3 - 3c_2x^2y + 3c_2xy^2 - c_2y^3 + \varepsilon
\end{aligned}
$$

Eq. 1

The first row is the compact form of the equation, where c_0, c_1, and c_2 are coefficients that determine how much each term contributes to the value of *z*. The second row is the expanded form, which shows all of the individual terms that result from applying the binomial expansion to $(x - y)^2$ and $(x - y)^3$. ϵ represents the error term, accounting for the variability in *z* that is not explained by the model. Adapted from Humberg et al. (2022).

Humberg et al. (2022) describe the strict asymmetric congruence model (CA model) as an extension of the simple congruence model. They both begin with the concept that the outcome measure (*z*) is predicted from $(x - y)^2$. This part of the equation is referred to as the "congruency effect." The CA model introduces the cubic term $(x - y)^3$, which represents asymmetry between the predictors in the model and is aptly referred to as the "asymmetry effect." Each term in the compact equation represents a component of the hypothesis (congruency and asymmetry). The terms in the expanded equation represent the individual coefficients and their interactions up to the third degree (b_0 through b_9; Figure 8). The CA model is a constrained version of the full third-order polynomial model (Eq. 2). When compared to the full model, the CA model poses the following constraints: $b_1 = 0$, $b_2 = 0$, $b_4 = -2b_3$, $b_5 = b_3$, $b_7 = -3b_6$, $b_8 = 3b_6$, and $b_9 = -b_6$.

Figure 8

Coefficients in the Expanded CA Equation

$$
\begin{aligned}
z &= c_0 + c_1(x-y)^2 + c_2(x-y)^3 + \varepsilon \\
&= \underbrace{c_0}_{b_0} + \underbrace{0x}_{b_1} + \underbrace{0y}_{b_2} + \underbrace{c_1x^2}_{b_3} - \underbrace{2c_1xy}_{b_4} + \underbrace{c_1y^2}_{b_5} + \underbrace{c_2x^3}_{b_6} - \underbrace{3c_2x^2y}_{b_7} + \underbrace{3c_2xy^2}_{b_8} - \underbrace{c_2y^3}_{b_9} + \varepsilon
\end{aligned}
$$

Note: The *c* coefficients are estimated from the regression analysis based on the best fit of the model. A step-by-step breakdown of the analyses can be found in Humberg et al.'s (2022) accompanying OSF project (osf.io/drv3a).

$$z = b_0 + b_1x + b_2y + b_3x^2 + b_4xy + b_5y^2 + b_6x^3 + b_7x^2y + b_8xy^2 + b_9y^3 + \varepsilon. \quad \textbf{Eq. 2}$$

The full third-order model omits the constraints that are imposed onto the coefficients by the CA model. Notably, this equation includes the linear term with a nonzero coefficient, which will result in the highest *z* values for incongruent predictor combinations, thus contradicting the congruence effect.

The process of investigating the congruence hypothesis consists of two steps: (1) =test the model constraints on the full third-order model, and (2) the coefficients of the constrained model are inspected to reveal whether they support the original hypothesis. Step Two requires that there is a congruence effect in the expected direction, an asymmetry effect exists in the expected direction, and there is no data behind E_2 with significantly higher outcome predictions than points on E_2.

A likelihood ratio test (X^2) can be used to assess Step One to see if the constraints are justified. The X^2 test checks to see if the CA model fits the data significantly worse than the full model; therefore, a *p*-value greater than 0.05 for the likelihood ratio test would support the constraints imposed by the CA model and permit the researcher to

proceed to step two. If the likelihood ratio test is significant, Humberg et al. (2022) recommend testing the linear main effects to see whether they occur in addition to, or in place of, the hypothesized congruence effect.

The first part of Step Two is to determine if the congruence effect and asymmetry effect are both in their respective expected direction. This is done through the equation for the congruence effect ($c\hat{}1 = b\hat{}3 < 0$) and the equation for the asymmetry effect ($c\hat{}_2 = b_6\hat{} < 0$). Both of these equations examine the specific coefficient as it relates to the line of congruent predictor combinations (LOC). A significantly negative c_1 means that the surface falls down the sides of the LOC, and a significantly positive c_1 means that the surface rises on both sides of the LOC. When c_2 is significantly negative, the incongruence in the direction of $x < y$ holds a stronger relationship with z than $x > y$. When c_2 is significantly positive, the effects are reversed. The second half of Step Two aims to determine whether the model supports the suggested effect for "the whole range of realistic predictor values" (Humberg et al., 2022). The CA model assumes that for all possible combinations of the predictor variables, the surface does not infinitely fall or rise to both sides of the LOC.

A number of elements are evaluated using RSA to identify asymmetrical congruence effects. An example of each component of the CA model is provided in Figure 7. The asymmetric effect is indicated by the surface's shape, where one side of the LOC falls infinitely while the other side initially falls, then changes direction and rises. There is a pink line on the *xy* plane that indicates where this pivot occurs. It is referred to as the *second extremum line* (E_2), with the LOC being the first extremum line. The second extremum line and the LOC are parallel according to the model definition.

Combinations of predictors that exist behind the E_2 line have a higher outcome of *z* than those on E_2, even though the combinations behind E_2 are more incongruent. This is contradictory to one of the central ideas of the CA model, which is that more incongruence equals lower outcome variables.

Therefore, part of the hypothesis testing for this model requires identifying those data points and assessing whether or not they are meaningfully different from the points on the LOC. To do this, one must identify the line of E_2 and the range of predictor combinations that fall behind it. If the range of these combinations reaches into the area of the surface where they would significantly conflict with the model (depicted by the red perpendicular line in Figure 7), then the hypothesis is rejected. Equation 3 is the linear equation for identifying the position of the second extremum line. Any of the points on this line can be used as the comparison point for the significance test because they all have the same outcome prediction $z\hat{}$ and share the same standard error of $z\hat{}$. Humberg et al. suggest using the point (*xr*, *yr*), which is where the lines g_0 and E_2 intersect. This can be done using the coordinates in Eq. 4. To assess the significance of the outcome at this point (z_r) and the points behind E_2, one may examine the one-sided confidence interval for z_r and see if the combinations fall within them. To find the confidence interval, one would use equation 1 to z_r and its corresponding standard error. If all of the points behind E_2 exist within this confidence interval, then one may infer that they don't differ significantly from any of the points on the LOC. Thus, I will have failed to reject my hypothesis.

$$y = x + \frac{2\hat{c_1}}{3\hat{c_2}}$$

Eq. 3

$$(x_r, y_r) = \left(\frac{-\hat{c_1}}{3\hat{c_2}}, \frac{\hat{c_1}}{3\hat{c_2}}\right)$$

Eq. 4

The analysis was completed using the RSA package in R (Schönbrodt & Humberg, 2020) utilizing the example code provided by Humberg et al. (2022). This package includes functions for customizing the hypothesized congruence model, comparing it to the results of the chi-square likelihood ratio test, and extracting the model coefficients. Functions for analyzing the LOC and E2 are also included. The R code uses a conservative alpha value of 0.01 for determining significance, but the authors (Humberg et al., 2022, pg 51) maintain that this is a preliminary heuristic and should be updated based on future methodological research, as there is not yet a "valid" method for avoiding potential inflation of Type I error rates (Berk et al., 2010, 2013; Lee et al., 2016; Rügamer & Greven, 2018). Similarly, there is no consensus on effect sizes or sample size planning.

The current recommendation is to find the R^2-difference between the CA model and a more restrictive model where the effect of interest is constrained to zero (e.g., strict simple congruence model; Aguinis et al., 2005; Aiken & West, 1991; Humberg et al., 2022; Jaccard & Turrisi, 2003). This method for assessing effect size works by examining the magnitude of the effect for asymmetry alone rather than relying on a calculation or rule of thumb. As mentioned in an earlier section, the temporary rule of thumb for sufficient sample size for cubic RSA is one that is "substantially larger than the size needed to detect small to medium second-order effects [quadratic RSA]" (Humberg et al., 2022). If appropriate, one would conduct subsequent exploratory analyses using

potential alternatives that the authors set forth in order to contribute to the gap that currently exists in this methodological space.

Phase II: Partial Mediation Model

To this point, the description of the analysis has focused on ADD. Affect was also intended to be incorporated into the model through a mediation analysis. Edwards and Cable (2009) found that subjective value congruency scores led to more positive organizational outcomes (i.e., job satisfaction, identification, and intent to stay) when mediated by positive psychological constructs (i.e., attraction and trust) than emotionally ambiguous constructs (i.e., communication, predictability). However, their analysis used Edwards' (2002) quadratic, not cubic, equation RSA methodology. Humberg et al. (2022) have not yet extended their cubic RSA to investigate mediation or moderation effects but offer it as an area for future research. In this study, I extended Edwards' (n.d.) rationale for combining RSA with a mediation analysis to look at the mediating role of affect. This approach examined the influence of affect on the relationship between the congruence of *x* and (motivations and beliefs) and the outcome *z* (change supportive behavior). The resulting model was conducted employing a multi-step mediation analysis framework with two parts: (1) the effect of congruence and asymmetry on the mediator (Equation 3) and (2) the effect of the mediator on the outcome variable (Equation 4, Equation 5, Equation 6).

$$M = a_0 + a_1(x-y)^2 + a_2(x-y)^3 + \epsilon_M \quad \textbf{Eq. 5}$$

M is the mediator, a_0 is the intercept, a_1 and a_2 are coefficients for the polynomial terms of congruency, and ϵ_M is the error term for the mediator equation.

$$z = b_0 + b_1(x-y)^2 + b_2(x-y)^3 + b_3M + \epsilon_z \quad \textbf{Eq. 6}$$

B_0 is the intercept, b_1 and b_2 are coefficients for the polynomial terms of congruency (representing the direct effect on z), b_3 is the coefficient for the effect of M on z (representing the mediated effect), and ϵ_z is the error term for the outcome equation.

Partial mediation is indicated if both the direct paths (from *x* and *y* to *z*) and the indirect path (through M) are statistically significant (Baron & Kenny, 1986; Kline, 2016). This means that the mediator (M) explains part of the relationship of *x* and *y* to the outcome *z*, but not all of it. The indirect effects of congruence on *z* through the mediator M are calculated by multiplying the coefficients from the mediator model by the coefficient b_3 from the outcome model. (i.e., a_1 x b_3 and a_2 x b_3). These products represent the indirect effects of the congruence components on the outcome variable that are mediated by M. The total indirect effect is the sum of these products if both the squared and cubed terms are significant and included in the model. Statistical significance of the indirect effects is typically assessed using bootstrapping methods to obtain confidence intervals. Bootstrapping methods are useful for significance testing of indirect effects because the distribution of these effects can be skewed or non-normal, particularly in smaller samples (Preacher & Hayes, 2008). The use of bootstrapping would be critical to the analysis, as there is no systematic approach to determining sample size for cubic RSA, much less a subsequent mediation analysis. Bootstrapping addresses this issue by generating a distribution of the indirect effect through repeated sampling with replacement from data. Additionally, the variance explained by each model was intended to be examined to see which model leaves the least amount of variance due to error.

Supplemental Measures

The items in the following subsections were developed to measure affect and behaviors.

Measure of Change-Supportive Behaviors

Herscovitch and Meyer (2002) developed a scale that assesses the full range of types of change-supportive (and non-supportive) behaviors: active resistance, passive resistance, compliance, cooperation, and championing. Each one represents a different level of discretionary effort. Active resistance was defined as the demonstration of hostile behaviors that aim to dismantle the success of the change initiative. Passive resistance manifests through covert, oppositional behaviors with the objective of intentionally hindering the change initiative. As the mid-point of the spectrum, compliance reflects the minimum effort exerted toward a change initiative. Compliance, in this context, signifies the behavior of an employee who reluctantly goes along with the change and does not demonstrate any opposition to it. The next level up, cooperation, refers to actions that go along with the spirit of the change and are preparation to make modest sacrifices. Finally, championing the change describes the actions of those who exhibit a great deal of enthusiasm for the change. These individuals "go above and beyond what is formally required to ensure the success of the change and promote the change to others." (Herscovitch & Meyer, 2002).

The response scale for this instrument was first constructed as a 100-point behavioral continuum. It is a visual analog scale (VAS), which is a type of item response format that is often used for one-item measures (DeVellis, 2016). The design reflects a range of resistance and support behaviors, which are anchored along the continuum from

left to right. Although continuous scale designs come with drawbacks (e.g., hindering the respondents' ability to discriminate between response options meaningfully), they have been used to generate more variance compared to a five or 7-point scale (DeVellis, 2016). Several studies report little to no difference in data quality between sliders and traditional scales when utilized appropriately (Cook et al., 2001; Roster et al., 2015). To better guide respondents toward the most accurate mark, the instrument was secured with behavioral anchors. This is similar to the output of behaviorally anchored rating scales (BARS; Schwab et al., 1975; Smith & Kendall, 1963). Each anchor included the definition of the five change behavior types (Appendix E).

Participants were prompted to adjust the slider to where they deemed the most aligned with their personal change-supportive behaviors. The combination of the VAS and BARS formatting was useful in the context of this study because it captured an aggregated view of behaviors over a period of time that is unique to the respondent. More specific behavioral questions can be difficult for respondents to recall retroactively. Instead, participants are prompted to recall the sum of their behaviors as a whole during the organizational change. This allows them to place the slider somewhere in between the types of behavioral patterns that are most representative of their overall memory of the experience (Cape, 2009). VAS response formats also help to alleviate response fatigue by reducing the number of items and increasing survey engagement (DeVellis, 2016; Roster et al., 2015).

Measure of Emotions about Change

To evaluate individuals' general affect regarding the change, I utilized an approach similar to that of Herscovitch and Meyer (2002). A slider scale was used to

measure how each participant experienced the change effort, using a continuum of positive to negative affect. The 100-point affect scale was anchored at five places: extremely negative (strongly resistant or upset), moderately negative (somewhat resistant or unhappy), neutral (indifferent or uncertain), moderately positive (somewhat supportive or hopeful), and extremely positive (super supportive or excited). A description and illustration of each anchor point were visible to the participants so that they could accurately place their emotion along the scale. For example, the narrative of the extremely positive anchor point on the slider would describe this level of affect as "I felt highly enthusiastic and supportive of the change. I had a strong belief in the benefits of the change, felt energized and motivated by the new direction, and/or experienced a sense of renewal and excitement." The measure is included in its entirety in Appendix F.

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CHAPTER 4

RESULTS

In this study, I followed the preliminary steps to prepare the data for the cubic RSA research design suggested by Humberg et al. (2022) and utilized the article's corresponding RSA package in R. Prior to analyzing the models, it is critical to standardize the motivation (*x*) and belief (*y*) items onto their grand mean and standard deviation. Centering *x* and *y* on their grand mean, rather than their own means, was important because only by subtracting the same value from people's scores on each item can one preserve the original discrepancy values $x - y$. The items were then scaled by dividing them by the grand standard deviation to ensure that the theoretical meaning of incongruent predictor combinations stays the same. Lastly, I inspected the differences in participants' level of congruence. This step aims to identify whether there are skewed distributions between those that have high levels of incongruency where *x* is much greater than *y*, where y is much greater than x, and where *x* and *y* are roughly congruent. The R package follows Humberg et al.'s (2022) strategy for eyeballing the data by having the groups split based on when *x* and *y* are (or are not) at least half of a grand standard deviation from one another. They argue that in extreme instances, in which all the predictor combinations fall within one category, the data would be insufficient for investigating congruence effects. Distributions that appear to be slightly skewed should

be transparently reported and evaluated as tentative results. Table 9 displays the distributions for each factor's *x* and *y* values. The groups vary in size across each factor, but all of them include the $x << y$ as the minority of combination groups. What they wanted from the change effort (motivation) was almost always higher than what they experienced (belief). This is an interesting finding but may have negative implications for the subsequent models, and results for this group should be considered with caution.

Table 9

Participant Levels of Congruence

Factor	***x >> y***	***Congruent***	***x << y***	***Discrepancy?***
Sympathy	51%	44%	6%	Yes
Mastery	54%	43%	2%	Yes
Order	41%	42%	17%	Yes
Unorthodoxy	31%	46%	23%	Yes

Note: A cutpoint of $|\Delta z| > 0.5$ is used to categorize groups.

The first step of analyzing the congruency effects required calculating the hypothesized CA model for each of the four factors in regard to their relationship with change-supportive behaviors. However, all four factors performed significantly worse than the full polynomial model ($p < 0.005$). The same was true for each of the factors in regard to their relationship with affect ($p < 0.005$). Although the CA models accounted for varying levels of variance and were statistically significant ($p < 0.001$), they all failed to predict their respective outcomes as well as the full cubic model. Each model's R^2 and AIC are listed in Table 10. Thus, H2, H3, and H4 were not supported, and the relationships hypothesized in H1 could not be assessed according to the CA model. As recommended, a simpler model was explored for each of the factors in order to test

whether linear main effects occurred in addition to or instead of a congruence effect (Humberg et al., 2022).

Table 10

CA Models vs. Full Cubic Polynomial Models

Factor	***Outcome***	***CA R^2***	***CA AIC***	***Cubic R^2***	***Cubic AIC***
Sympathy	Behavior	0.162	720.294	0.330	675.290
Mastery	Behavior	0.136	728.424	0.310	683.145
Order	Behavior	0.115	734.844	0.324	677.802
Unorthodoxy	Behavior	0.076	746.641	0.189	726.601
Sympathy	Affect	0.206	705.714	0.495	599.531
Mastery	Affect	0.268	684.002	0.549	569.024
Order	Affect	0.167	718.732	0.526	582.324
Unorthodoxy	Affect	0.224	754.165	0.251	697.200

A linear model with an interaction term (IA) was next tested for each factor and their relationships with behavior. Main effects of motivations (*x*) were only found for the Order factor (B = 0.17, $p < 0.005$). In all, these results provide only partial support for H1a ("Motivations will be positively related to change-supportive behaviors"). Main effects of beliefs *(y*) were found to be significant for all four factors ($p < 0.001$). This supported H1b ("Beliefs will be positively related to change-supportive behaviors") across all factors. The final part of H1 was assessed by examining a simple linear regression between affect and behavior (Table 11). This relationship was significant, showing support for H1c ($R^2 = 0.47$, $p < 0.001$).

Table 11

Regression Coefficients for IA Models with Behavior

	b_0	b1	b2	b4	R^2
Factor		***x***	***y***	***xy***	
Sympathy	3.15	-.14	.55	.05	.29
p-values	*<.001***	*.06^*	*<.001***	*.56*	*<.001***
Mastery	3.0	.00	.50	.05	.27
p-values	*<.001***	*1.0*	*<.001***	*.55*	*<.001***
Order	2.8	.17	.43	.16	.31
p-values	*<.001***	*.01**	*<.001***	*<.001***	*<.001***
Unorthodoxy	2.9	-.14	.41	.10	.16
p-values	*<.001***	*.13*	*<.001***	*.13*	*<.001***

Note: $p < 0.001$**, $p < 0.05$*, $p < 0.10$^

In lieu of H2's original hypotheses, I assessed the linear model for potential congruence effects. Of the four factors, only the Order factor had a significant interaction term ($p < 0.05$). This indicates that the effect of one of the variables on the outcome changes depending on the level of the other variable. Support for a congruence effect was analyzed using the checklist developed by Humberg et al. (2019; Appendix J). The results of the RSA indicated a broad congruence effect for the Order factor.

In place of H3's original hypothesis, a linear model with an interaction term (IA) was tested for each factor and its relationship with affect. Main effects of motivations (x) were found for the Order ($B = 0.11$, $p < 0.005$) and Sympathy factors ($B = -0.29$, $p < 0.001$). However, Sympathy was negatively related to affect. Main effects of beliefs (y) were found to be significant for all four factors ($p < 0.001$). The Sympathy factor had a significant interaction term, showing a negative relationship with affect ($B = -0.14$, $p < 0.05$). There was no evidence of a congruence effect across all of the factors.

Table 12

Regression Coefficients for IA Models with Affect

	b_0	b1	b2	b4	R^2
Factor		***x***	***y***	***xy***	
Sympathy	2.28	-.29	.81	-.14	.45
p-values	*<.001***	*<.001***	*<.001***	*.047**	*<.001***
Mastery	2.07	-.06	.70	.07	.49
p-values	*<.001***	*.415*	*<.001***	*.316*	*<.001***
Order	1.87	.11	.64	.05	.51
p-values	*<.001***	*.044**	*<.001***	*.275*	*<.001***
Unorthodoxy	1.81	-.03	.48	.04	.24
p-values	*<.001***	*.688*	*<.001***	*.477*	*<.001***

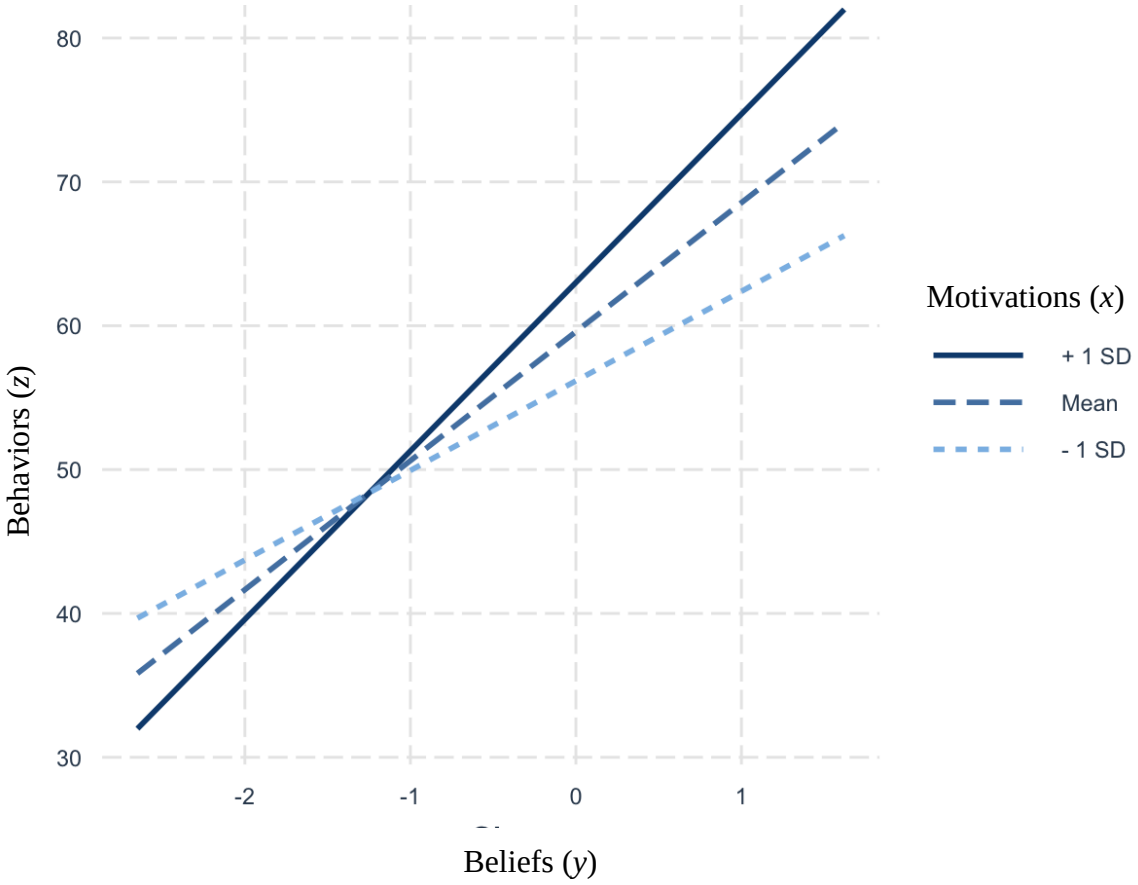
Note: $p < 0.001$**, $p < 0.05$*, $p < 0.10$^

The interaction effect of the Order factor was further analyzed for the varying ranges of motivation (SD-1, mean, and SD+1). A simple slope analysis revealed an asymmetric effect for the interaction between motivations and beliefs. Employees who were motivated by Order at SD+1 above the mean participated in change-supportive behaviors the least when their beliefs around Order were low and the most when their beliefs around Order were high. The slope of this relationship was significant for this group ($r = 6.53$, $p < 0.001$), as well as those with average motivation scores for Order ($r = 3.22$, $p < 0.05$). The slope was not significant for those with SD-1, providing evidence for asymmetry (i.e., behaviors from those who are not motivated by Order are not as influenced by their experience with Order). Similar significant relationships for the SD+1 groups were found for the Sympathy and Unorthodoxy factors. This provides strong evidence for a potential asymmetric congruence and should be re-examined using RSA methodology in the future. A practical example of this finding might manifest as an employee who is motivated by the organization's progress towards its goal but does not

perceive that the change intervention will support the aims of the organization is more likely to participate in less change-supportive behaviors (potentially change resistant behaviors) than those who are indifferent or don't care at all about the organization's goals. The plot for the simple slope of the Order factor is below (Figure 9).

Figure 9

Simple Slope Analysis for the Order Factor



Finally, the Order factor was examined in the context of its relationship with affect. When affect was added to the IA model, there were no longer main effects for motivation or beliefs ($R^2 = 0.49$, $p < 0.001$). However, the interaction effect was still significantly related to behaviors, and the coefficient only slightly decreased. The amount

of variance explained by the updated model was greatly increased, from 31% to 49%. In sum, the addition of the affect variable provided a greater explanation for change behaviors and revealed the main effects of motivation and beliefs, which are fully mediated by affect but have minimal influence on the congruency effect. This finding suggests that emotions play a critical role in explaining change behaviors, but likely in a different manner than hypothesized in this study. The exact relationship with the congruence model remains uncertain. A direction for future studies may attempt to better place affect into the congruency model to unravel its role in shaping change-supportive behaviors.

CHAPTER 5

DISCUSSION

The aim of this study was to incorporate motivation into the model of readiness for organizational change. Specifically, I was interested in understanding the dynamic between motivation and the psychological processes that are currently included in the theory (cognition and affect). A four-factor instrument for measuring readiness for change based on reversal theory motivational states was developed in Phase I and utilized to test hypotheses in Phase II. Although the intent was to use cubic polynomial regression methodology, the data did not meet the criteria established by Humberg et al. (2022) for such analyses.

Instead, main effects and congruency effects were assessed through exploratory analyses using a linear interaction model. Main effects of motivation on behavior were only significant for the Order factor (and not for the remaining three factors), whereas main effects of beliefs on behavior were significant across all four factors. These findings underscore previous research regarding the role beliefs play in readiness for change. Beliefs about change do appear to have a meaningful relationship with change-supportive behaviors. However, they don't appear to tell the whole story on their own. The results from the present analysis suggest that individual motivation characteristics may help

explain this relationship, particularly regarding motivations toward goal achievement and organizational conformity.

A simple linear regression indicated that affect had a significant positive relationship with change readiness behaviors, providing additional support for the existing models proposed by organizational change readiness researchers (Oreg et al., 2018; Rafferty & Minbashian, 2019). Only the Order factor had a significant interaction term (i.e., moderating effect) between motivation and beliefs in relation to change-supportive behaviors, and there were no congruence effects on affect. These results suggest limited support for the hypothesized congruence model. However, there were substantial statistical limitations (e.g., low power and ambiguous criteria for the RSA methodology), as detailed in the Limitations section below. Future research may be better suited to test these relationships.

Implications for Research and Practice

Despite the limited findings to support the hypotheses, there are several areas in which contributions were made by this study. Incorporating motivation into the existing model of organizational change readiness is a novel addition to the theory and should not yet be abandoned. Although many organizational change researchers agree on the importance of considering individual attributes as a critical component of change readiness (e.g., Holt, Armenakis, Harris, & Feild, 2007; Walker et al., 2007), they have not yet explicitly integrated motivation as a piece of the puzzle. To fully understand change readiness, we should capture all of the psychological elements that may influence employee behaviors. This includes understanding what employees want, how they

perceive their experience, and how it makes them feel. The exploratory findings of the role of motivation in this study warrant further examination with greater power.

Additionally, individual characteristics have not yet been assessed in terms of their internal congruency. The exploratory results of this study suggest that equivalence between what individuals want from their organization during times of change and how they perceive what occurs can have a substantial effect on how they contribute to the success of the change. Although this relationship was significant for only one of the present factors, other models of congruency may turn out to be more fruitful. For example, level-dependent congruence may capture differences in behaviors between individuals with varying levels of motivation (i.e., does the outcome depend not just on the congruency effect but on the strength of the underlying trait?). Another option for future studies of congruency in the area of change readiness would be to examine a rising ridge model to assess mean predictor levels across individuals (i.e., assessing whether or not the magnitude of mean congruence has varying effects on the outcomes; Humberg et al., 2022).

Another potential avenue for future research includes longitudinal studies to capture changes in state motivation, beliefs, and affect over time. Not only would this approach remedy the issues inherent in collecting retrospective data, but it would allow the researcher to see how these constructs fluctuate and develop throughout the change experience. Additional context could be gathered in order to understand the organizational triggers and time points that affect how people think and feel about the change. Understanding the timing and sequence of these psychological shifts could lead

to the development of proactive interventions aimed at sustaining or improving employee reactions throughout the transformation process.

The results of this study provided evidence for the importance of emotions in relation to change-supportive behaviors. Potential studies should reconsider the role of affect in regard to motivation and beliefs in the context of organizational change. It may be that affect fits more cohesively within the congruence model or even as an antecedent to congruence rather than as a mediator or moderator of congruence. One may call on Weiss and Cropanzano's (1996) affective events theory, which suggests that work-related events elicit affective reactions that can, in turn, influence attitudes and behaviors. Future longitudinal studies could examine how emotional reactions to initial change announcements or interventions set the stage for how individuals align their motivations and beliefs. Additionally, the development and validation of a measure that is specific to affect in the context of organizational change could benefit this field of research, as affect has not been consistently measured across studies. Organizations could integrate the findings and measurement tools into practice by designing change interventions that specifically target emotional aspects with the aim of fostering a positive emotional climate.

The current study makes considerable contributions to the reversal theory literature by providing novel context to the theory with regard to organizational change. The reversal theory literature spans many fields, with this being the first of the change readiness nature. Another interesting contribution to reversal theory was the unexpected categorization of motivational states into a four-factor structure model. This research indicates that the eight reversal theory states manifest in differing patterns based on the

specific context. The adaptability to context suggests that the motivational states posited by RT are responsive to environmental cues and demands. What's more, RT researchers should look for similar patterns across the domains of human experience. These comparative studies could be used to develop a comprehensive understanding of how the combinations of the states (e.g., telic with conforming; paratelic with rebelliousness) manifest themselves across different settings (e.g., sports, leisure activities, or interpersonal relationships).

The instrument introduced in this study presents both a challenge and an opportunity for future research. The potential of this tool is promising but requires additional data before it may be used with confidence. Replication and validation efforts using new samples and methodologies in the workplace appear warranted. A solid measurement tool for capturing organizational change readiness would have positive methodological implications for reversal theory and organizational development research, as well as practical implications for change management.

Lastly, the use of cubic polynomial regressions for capturing congruence effects act as a replication effort in the pursuit of refining the RSA methodologies. Although most of the efforts were fruitless in this regard, this study highlights the criticality of distributed congruency groups to ensure the robustness and validity of findings. Sample size estimation should take this into consideration prior to conducting RSA analyses.

Limitations

Several limitations were present in this study. All data was collected at only one point in time; thus, I am unable to examine a core feature of reversal theory, namely, motivational state reversals and the role they may play in building and sustaining change

readiness over the course of a planned change effort. This cross-sectional design does not allow the current study to hypothesize causal relationships between the variables and makes it impossible to track the evolution of individual characteristics over time. Other researchers are encouraged to pursue longitudinal research methods that can capture individual characteristics at various points in time.

Measuring all constructs from the same person using the same method creates concerns about common method variance (CMV). CMV is defined as a systematic error variance that stems from a common method used to measure constructs in a study (Podsakoff et al., 2003; Richardson et al., 2009). The attribution of variance to the method of collection (rather than the construct itself) and its knock-on effects of artificially increased consistency between independent and dependent variables are real threats to the internal validity of these findings. When data are collected through the same method, the magnitude of relationships may be inflated, leading to a higher Type I error rate (Campbell & Fiske, 1959).

Using an online sample comes with risks of bias and data integrity issues. Participants recruited through online platforms may not be representative of the broader population. Online platforms consist of registered users that have the opportunity to participate in endless research studies. Thus, they have been referred to as “professional survey-takers,” meaning that they may be exposed to enough research materials to lose their sense of non-naivete, which can have negative consequences on effect size (Chandler et al., 2015; Hillygus et al., 2014; Huff & Tingley, 2015). The anonymity that comes with online surveys may encourage some respondents to provide disingenuous responses or engagement from individuals who do not take the process seriously, which

can compromise the quality of the data. Although I was able to utilize data processing and statistical techniques to try and identify inattentive responders and check for data integrity (e.g., tests of normality and multivariate normality, completion duration analysis), future research could take more proactive approaches (e.g., stratified sampling, attention check items) in addition to the screening procedures used in this study.

Utilizing new and relatively untested methodology, such as cubic RSA, raises the possibility of ambiguity in research design and the interpretation of results. For example, without clear guidance on power and sample size, the study risks being underpowered, leading to an increased probability of Type II error. As the methodology develops, future research should take advantage of emerging guidelines and contribute to the evolution of design recommendations.

Motivation, beliefs, and affect are deeply interwoven, and more research will need to be done to fully understand the interplay between the three constructs in the context of an organizational change (Ajzen, 1991; Ryan & Deci, 2000). To advance this understanding, subsequent studies will need to employ more sophisticated models (e.g., SEM or congruency modeling) that can untangle the causal relationships and potentially reciprocal nature between these constructs. Qualitative methodologies may provide deeper insights into how these psychological elements interact and impact organizational change processes.

Summary

In conclusion, this study attempted to weave the psychological constructs of motivations, beliefs, and affect into a cohesive framework in the context of organizational change readiness. To capture this, an instrument was developed and validated based on

the reversal theory of motivation and personality. Congruency between individuals' motivations and beliefs as it relates to their experience and behaviors regarding a recent organizational change was analyzed along with the mediating role of affect. Main effects for motivations on change-supportive behaviors were positive and significant only for the Order factor, whereas all four factors on the belief scale had a significant positive effect on change-supportive behaviors. Affect also had a significant positive relationship with behaviors. Statistical limitations did not allow for the use of the cubic RSA method of assessing congruency. Thus, an exploratory linear regression with an interaction term was utilized. The Order factor was the only factor that had a significant interaction term for motivations and beliefs, indicating a congruency effect. Subsequent analyses revealed an asymmetric moderating effect, where the directionality of the interaction's incongruency was related to the strength of the relationship. This provides support for the idea that people who are really motivated by a specific phenomenon but don't experience it during an organizational change will decrease their participation in change-supportive behaviors at a more drastic rate than someone who is indifferent or doesn't care. Lastly, affect appeared to fully mediate the direct effects of both the motivation and belief components of the Order factor but not the interaction term. This suggests that affect plays a role in the overall relationship, potentially in a more nuanced manner than initially expected.

The research presented in this dissertation makes contributions to the fields of organizational change readiness, reversal theory, and the cubic RSA methodology. There were several findings that warrant further investigation and could lead to fruitful avenues for future research. The limitations present in this study, including cross-sectional design and low power, set a clear agenda for future longitudinal studies and diversified

methodologies to validate and expand upon these results. Overall, the study enriches the current literature by highlighting the fluidity of individual attributes and the importance of context in shaping the psychological landscape of organizational change initiatives.

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APPENDIX A

INFORMED CONSENT

HUMAN SUBJECTS CONSENT FORM
General Public Recruited via Research Panels such as MTurk or Prolific

The following is a brief summary of the project in which you are asked to participate. Please read this information before signing the statement below. You must be of legal age (18 or older) to participate in this study.

TITLE OF PROJECT: Measuring Support for Organizational Change

PURPOSE OF STUDY/PROJECT:

The purpose of the study is to develop a questionnaire measuring motivation to support planned organizational change efforts in general, as well as motivation to support change efforts that promote diversity, equity, and inclusion in organizations.

SUBJECTS:

All participants will be 18 years of age or older. The sample will include members of the general public recruited via commercial platforms such as Amazon MTurk or Prolific. All participation will be voluntary.

PROCEDURE:

Participants are agreeing to allow the research team to access their data from the survey responses. Participants are agreeing to provide the researchers with demographic information to determine the representativeness of the sample. The demographic information will only be reported in the aggregate.

BENEFITS/COMPENSATION:

Compensation of $1.25 for each ten minutes of research time will be offered to research participants who provide acceptable work. Responses deemed by researcher to be non-compliant, inattentive or incomplete will not be accepted and will result in no compensation to the participant.

RISKS, DISCOMFORTS, ALTERNATIVE TREATMENTS: The participant understands that Louisiana Tech is not able to offer financial compensation nor to absorb the costs of medical treatment should you be injured as a result of participating in this research. No known risks are associated with this study. No alternative treatments will be offered. Some survey items may be extreme in terms of feelings and reactions. If participants experience any distress during or after the survey, they may contact the National Distress Hotline

at 1-800-985-5990. The individual may quit the survey at any time without consequence.

The following disclosure applies to all participants using online survey tools: This server may collect information and your IP address indirectly and automatically via "cookies".

I,_____ attest with my signature that I have read and understood the following description of the study, "Measuring Support for Organizational Change", and its purposes and methods. I understand that my participation in this research is strictly voluntary and my participation or refusal to participate in this study will not affect my relationship with Louisiana Tech University in any way. Further, I understand that I may withdraw at any time or refuse to answer any questions without penalty. Upon completion of the study, I understand that the results will be freely available to me upon request. I understand that the results of the material will be confidential, accessible only to the principal investigators, myself, or a legally appointed representative. I have not been requested to waive nor do I waive any of my rights related to participating in this study.

Signature of Participant _____ Date _____

CONTACT INFORMATION: The principal experimenters listed below may be reached to answer questions about the research, subjects' rights, or related matters.

PRINCIPAL INVESTIGATOR: Mitzi Desselles - mdessell@latech.edu CO-INVESTIGATOR: Sidney Thomas (sth043@latech.edu); Mi Chelle Leong (mcl041@latech.edu)

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

Dr. Richard Kordal, Director, Office of Intellectual Property & Commercialization Ph: (318) 257-2484, Email: rkordal@latech.edu

APPENDIX B

CONTENT ADEQUACY QUESTIONNAIRE

iCCR Survey (Content Adequacy Assessment)

Start of Block: INTRO

Background

Background: As part of Louisiana Tech's participation in the iChange network (the National Science Foundation's Institutional Change Initiative), the grant team will conduct research on an upcoming initiative to enhance diversity, equity, and inclusion (DEI) on campus. Our research questions focus on uncovering what motivates individuals to be ready for organizational change, such as increased DEI. Innovative and potentially transformative aspects of the research approach are incorporation of affective responses to change and the application of a dynamic model of motivation, reversal theory. Reversal theory (RT) postulates that motivation is state-based rather than trait-based and is thus dynamic and psychologically diverse. The theory also bridges the divide between motivation (i.e., perceived benefits and barriers to supporting DEI at Louisiana Tech and the specific efforts to enhance it) and emotion (i.e., how I feel about DEI on campus and about change efforts as they unfold). A dynamic model of motivation is especially relevant if one views culture change as an emergent process. Based on the eight factors of reversal theory, a measure will be developed to assess the motivations that encourage readiness for organizational change. This survey will later be distributed to faculty, staff, and students at the university to gain insights regarding change readiness as it relates to DEI. These insights will be utilized by the university's administration to appropriately implement the upcoming institutional change and foster the greatest amount of support.

DIRECTIONS **Directions:**

We are asking you to take this questionnaire to help us assess the adequacy of our first set of items. You will be asked to rate whether or not you believe the item reflects the corresponding reversal theory concept by choosing *yes* or *no*.

NAME

Name of Subject Matter Expert: Please provide your name so that we can reach out if we have any questions regarding one of your responses:

_____

LANGUAGE English is my first language

- ○ Yes (1)
- ○ No (2)

End of Block: INTRO

Start of Block: CONFORMING

CONFORMING Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: CONFORMING

	Yes (1)	No (2)
are supported by my boss (1)	○	○
are supported by my coworkers (14)	○	○
are tried and true (15)	○	○
follow best practices from what has succeeded in other organizations (16)	○	○
honors our traditions (17)	○	○
most of my coworkers supports (18)	○	○
share similar attitude with people around me (19)	○	○

End of Block: CONFORMING

Start of Block: OTHER-MASTERY

OTHER-MASTERY Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: OTHER-MASTERY

	Yes (1)	No (2)
help in training others' proficiency at work (1)	○	○
help others advance in their careers (23)	○	○
help others succeed in their jobs. (24)	○	○
improve coworkers' skills (25)	○	○
promote others' competency at work (26)	○	○
will help others improve their skills on the job. (27)	○	○
will increase others' performance at work (28)	○	○

End of Block: OTHER-MASTERY

Start of Block: OTHER-SYMPATHY

OTHER-SYMPATHY Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: OTHER-SYMPATHY

	Yes (1)	No (2)
advocate for others (1)	○	○
foster warmer collegial relationships across different groups within the organization (13)	○	○
help others feel more appreciated as a person (14)	○	○
help others feel valued by the organization (15)	○	○
improve relationship between coworkers (16)	○	○
make others feel more included in the organization (17)	○	○
make others happier at work. (18)	○	○
promote closeness between coworkers (19)	○	○
promote wellbeing of employees (20)	○	○
will boost others' morale (21)	○	○
will make others feel happier at work (22)	○	○

End of Block: OTHER-SYMPATHY

Start of Block: PARATELIC

PARATELIC Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: PARATELIC

	Yes (1)	No (2)
are energizing (1)	○	○
are engaging (12)	○	○
are enjoyable (13)	○	○
are entertaining (14)	○	○
are fun (15)	○	○
are intellectually stimulating (16)	○	○
are interesting (17)	○	○
make work more enjoyable (18)	○	○

End of Block: PARATELIC

Start of Block: REBELLIOUS

REBELLIOUS Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: REBELLIOUS

	Yes (1)	No (2)
allow me to do my own thing in my own way (1)	○	○
are different (18)	○	○
are innovative (19)	○	○
are innovative for the organization (20)	○	○
are not the same old thing (21)	○	○
are surprising and unexpected (22)	○	○
break free from the organization's usual norm (23)	○	○
challenge the status quo (24)	○	○
make a clean break from the past (25)	○	○

End of Block: REBELLIOUS

Start of Block: SELF-MASTERY

SELF-MASTERY Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: SELF-MASTERY

	Yes (1)	No (2)
are challenging (1)	○	○
elevate my position in the organization (14)	○	○
help me advance in my career (15)	○	○
help me succeed in my job (16)	○	○
increase my confidence in navigating sensitive topics (17)	○	○
promote self-learning (18)	○	○
will help me improve my skills on the job (19)	○	○
will increase my performance at work (20)	○	○

End of Block: SELF-MASTERY

Start of Block: SELF-SYMPATHY

SELF-SYMPATHY Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: SELF-SYMPATHY

	Yes (1)	No (2)
help me feel more appreciated as a person (1)	○	○
help me feel valued by the organization (12)	○	○
improve others' perception of me (13)	○	○
make me happier at work (14)	○	○
that help me feel more appreciated as a person (15)	○	○
that help me feel valued by the organization (16)	○	○
that improve others' perception of me (17)	○	○
that make me happier at work (18)	○	○
encourages warm caring relationships (19)	○	○
allows me to feel emotionally safe (20)	○	○
helps me feel cared for by the organization (21)	○	○
helps me feel taken care of (22)	○	○
protects me from psychological harm (23)	○	○
makes me feel the organization truly cares about me (24)	○	○

End of Block: SELF-SYMPATHY

Start of Block: TELIC

TELIC Please indicate whether or not you believe the motivational situation reflects the corresponding reversal state: TELIC

	Yes (1)	No (2)
allow the organization to reach its goals (1)	○	○
benefit the organization (12)	○	○
foster a greater sense of meaning (13)	○	○
help the organization to acheive its goal (14)	○	○
help the organization to be successful (15)	○	○
produces positive result (16)	○	○
redirect the organization to focus in achieving its goal (17)	○	○
support the goals of the organization (18)	○	○
truly make a difference (19)	○	○

End of Block: TELIC

APPENDIX C

PROLIFIC SCREENER SURVEY

Public Study Title: Understanding Organizational Change Readiness
Internal Study Title: Screener 1.0

Study Description:

In this study, participants will be asked about their experiences with organizational change. Organizational change refers to significant modifications or transformations that occur within a company or workplace. It can involve various aspects such as changes in the organizational structure, processes, policies, or technologies. Examples of organizational change include the implementation of new systems or technologies, restructuring of departments or teams, introduction of new policies or procedures, or shifts in the overall mission or direction of the organization.

Privacy Notice:

We are committed to protecting your privacy and ensuring the security of your personal data. This privacy notice explains how we collect, use, and manage the information you provide to us during this research study. Please read this notice carefully before participating.

- **Data Collection**: We will collect personal data provided by you voluntarily during the survey process. This may include demographic information and responses to survey questions. All data collected will be treated with strict confidentiality and stored securely. Your responses will be anonymized and cannot be personally identified.
- **Purpose and Use of Data:** The data collected will be used solely for the purposes of this research study. It will be used for analysis and reporting of aggregate, anonymous results. Individual responses will be anonymized and cannot be personally identified. The data will be used solely for academic or research purposes and will not be used for commercial or marketing purposes.
- **Data Storage and Security:** All personal data collected will be securely stored and accessible only to authorized research personnel. We will take reasonable precautions to protect your data from unauthorized access, disclosure, alteration, or destruction. Data will be stored for the duration necessary to complete the research study and as required by applicable laws and regulations.
- **Data Sharing:** We will not share your personal data with any third parties unless required by law or with your explicit consent. Aggregate, anonymized data may be shared with other researchers or published in academic or research publications. However, individual responses will not be identifiable.
- **Rights of Participants:** You have the right to access, rectify, and delete your personal data held by us, subject to applicable laws and regulations.

If you have any concerns or questions about the data collected or how it is being managed, please contact us using the provided contact information.

By participating in this research study, you acknowledge and consent to the collection, use, and management of your personal data as described in this privacy notice. Rest assured that your responses will remain anonymous and cannot be personally identified. If you have any further questions or require additional information, please contact Sidney Thomas at sth043@latech.edu.

Thank you for your participation.

Survey Items:

Question 1: Which of the following statements best describes your most recent experience with organizational change?

- I have never experienced an organizational change.
- I have experienced an organizational change in the last 6 months.
- I have experienced an organizational change between 6 months and 1 year ago.
- I have experienced an organizational change between 1 and 5 years ago.
- I have experienced an organizational change over 5 years ago.

Question 2: Which of the following types of organizational change best describes your most recent experience with organizational change?

- I have never experienced an organizational change.
- Structural: These involve changes in the org structure, such as mergers/acquisitions, reorganizations, or changes in reporting lines.
- Technological: These involve the adoption of new technologies or processes, such as automation, new software, or updated equipment.
- Procedural: These involve changes in procedures or processes, such as changes in policies, rules, or regulations.
- Personnel changes: These involve workforce changes, such as significant downsizing or expansion of the size, scale, or operational capacity.
- Cultural: These involve changes in the company culture, such as changes in values, beliefs, or attitudes.
- Strategic: These involve changes in the overall strategy/direction of the org, such as entering new markets or diversifying products.
- Operational: These involve changes in daily operations like production processes, supply chain management, or customer service policies.
- Financial: These involve changes in financial practices like budgeting, cost-cutting, or compensation/benefits policies.

APPENDIX D

READINESS FOR ORGANIZATIONAL CHANGE ITEMS: SAMPLE #1

Org Change Pilot 1.0

Start of Block: Consent Form

Consent **Title of the Study: Factors Influencing Support for Organizational Changes**

Introduction:
You are invited to participate in a pilot study that aims to investigate the factors influencing individuals' decisions to support organizational changes. The purpose of this study is to understand the importance of various factors that influence individuals when considering whether to support a change initiative in their workplace.

Description of the Study:
Participation in this study involves answering a series of questions about your perceptions and beliefs regarding various factors that could influence your decision to support a change in your workplace. The questionnaire will be administered online, and it should take approximately 10 minutes to complete.

Confidentiality:
Your responses will be treated with strict confidentiality, and all data will be anonymized to ensure privacy. Your personal information will not be disclosed, and your data will be used for research purposes only.

Voluntary Participation:
Participation in this study is entirely voluntary. You have the right to refuse to participate or withdraw from the study at any time without any consequence. Your decision will not affect your relationship with the researchers or any organization.

Benefits of Participation:
By participating in this pilot study, you will have the opportunity to contribute to the development of a valuable tool that can assist organizations in implementing effective change interventions. Your input will be instrumental in refining the questionnaire and ensuring its reliability and validity for future research.

Researcher Contact Information:
If you have any questions or concerns about the study, please feel free to contact the researcher through Prolific messaging.

Acknowledgment of Consent:
By proceeding to the survey and providing responses, you acknowledge that you have read and understood the information provided in this consent form and agree to voluntarily participate in the study.

Consent Q **Do you consent to participate in this study?**

- ○ I consent to participate in this study. (1)
- ○ I do not consent to participate in this study. (2)

End of Block: Consent Form

Start of Block: Prolific ID

ProlificID **What is your Prolific ID?**
Please note that this response should auto-fill with the correct ID.

_____

End of Block: Prolific ID

Start of Block: Screener Validation

Screener_1 Which of the following statements best describes your most recent experience with organizational change?

- I have never experienced an organizational change. (1)
- I have experienced an organizational change in the last 6 months. (2)
- I have experienced an organizational change between 6 months and 1 year ago. (3)
- I have experienced an organizational change between 1 year and 5 years ago. (4)
- I have experienced an organizational change over 5 years ago. (5)

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Screener_2 Please select the type(s) of organizational change that you experienced?

- [ ] Structural changes: These involve changes in the organizational structure, such as mergers and acquisitions, reorganizations, or changes in reporting lines. (1)
- [ ] Technological changes: These involve the adoption of new technologies or processes, such as automation, new software, or updated equipment. (2)
- [ ] Procedural changes: These involve changes in procedures or processes, such as changes in policies, rules, or regulations. (3)
- [ ] Personnel changes: These involve changes in personnel, such as significant downsizing or expansion of the size, scale, or operational capacity of an organization. (4)
- [ ] Cultural changes: These involve changes in the company culture, such as changes in values, beliefs, or attitudes. (5)
- [ ] Strategic changes: These involve changes in the overall strategy or direction of the company, such as entering new markets or diversifying the product portfolio. (6)
- [ ] Operational changes: These involve changes in day-to-day operations, such as changes in production processes, supply chain management, or customer service policies. (7)
- [ ] Financial changes: These involve changes in financial practices, such as changes in budgeting, cost-cutting measures, or changes in compensation and benefits policies. (8)
- [ ] None of the above. (9)

End of Block: Screener Validation

Start of Block: Instructions

Instructions **Instructions:**

Thank you for participating in our survey! We are interested in understanding the factors that influence individuals' support for organizational change. **Please reflect on the recent organizational change you experienced in your workplace within the last 6 months.** The following questions will inquire about the factors that influenced your support for this specific change. Your honest and thoughtful responses are greatly appreciated.

1. Take a moment to recall the organizational change you encountered in your workplace within the last 6 months. This could include changes in structure, processes, policies, technologies, or any other significant alterations.
2. Please read each item carefully and consider the factors that influenced your support for the change. Select the response option that best reflects your experience and perception.
3. Your responses are confidential, and your identity will remain anonymous. Answer the questions based on your own thoughts and feelings. There are no right or wrong answers; we are interested in your personal perspective.
4. If at any point you feel uncomfortable or wish to stop participating, you are free to exit the survey.

Thank you for your time and valuable input! Your contribution will help us gain valuable insights into the dynamics of organizational change. Let's begin the survey by considering the factors that influenced your support for the recent change you encountered.

End of Block: Instructions

Start of Block: Support for Change

Support **Supporting an organizational change can manifest in various ways. Think back to your recent experience with an organizational change. In which way(s), if any, did you show support for the change?**

- ☐ **Embraced the change:** Actively accepting and embracing the new direction, goals, or strategies set by the change initiative. (1)
- ☐ **Advocating for the change:** Promoting and advocating the benefits and value of the change to colleagues, teams, or other stakeholders. (4)
- ☐ **Adapting work practices:** Willingly modifying work processes, procedures, or behaviors to align with the change objectives and requirements. (5)
- ☐ **Providing feedback and suggestions:** Offering constructive feedback, suggestions, or ideas to improve the change implementation or address potential challenges. (6)
- ☐ **Participating in change activities:** Actively engaging in change-related activities such as training sessions, workshops, team meetings, or cross-functional collaboration. (7)
- ☐ **Supporting colleagues:** Assisting and supporting colleagues in adapting to the change, sharing knowledge, or providing guidance during the transition period. (8)
- ☐ **Displaying a positive attitude:** Demonstrating a positive and open mindset toward the change, fostering a culture of optimism and resilience. (9)
- ☐ **Taking ownership:** Assuming ownership and responsibility for implementing the change within one's own role or area of influence. (10)

☐ **Contributing to change communication:** Participating in effective communication efforts by sharing relevant information, providing updates, or addressing concerns related to the change. (11)

☐ **Collaborating with change leaders:** Actively collaborating with change leaders, managers, or change agents to facilitate the smooth implementation and success of the change initiative. (12)

☐ I did support the change, but in a different way than the examples listed. (13)

☐ I did not support the change in any capacity. (14)

End of Block: Support for Change

Start of Block: Question Stem

STEM **Think about the extent to which you supported the change effort. What motivated you?**

We are going to show you a list of reasons why an employee may support an organizational change effort. Please tell us how important each reason was for you personally.

End of Block: Question Stem

Start of Block: C1

C1 How important was it that... **my coworkers supported the change?**

- Not at all important (1)
- Low importance (2)
- Slightly important (3)
- Neutral (4)
- Fairly important (5)
- Very important (6)
- Extremely important (7)

End of Block: C1

Start of Block: C2

Item	*RT model*
How important was it that... my coworkers supported the change?	C1
How important was it that... my boss supported the change?	C2
How important was it that... the change being made was tried and true?	C3
How important was it that... the change followed the best practices based on what has succeeded in other organizations?	C4
How important was it that... the change honored the organization's traditions?	C5
How important was it that... the change helped in training others' proficiency at work?	OM1
How important was it that... the change helped others advance in their careers?	OM2
How important was it that... the change helped others succeed in their jobs?	OM3
How important was it that... the change promoted others' competencies at work?	OM4
How important was it that... the change helped others improve their skills on the job?	OM5
How important was it that... the change fostered warmer collegial relationships across different groups within the organization?	OS1
How important was it that... the change helped others feel more appreciated as a person?	OS2
How important was it that... the change improved relationships between coworkers?	OS3
How important was it that... the change promoted closeness between coworkers?	OS4
How important was it that... the change made others feel happier at work?	OS5
How important was it that... the change would be energizing?	P1
How important was it that... the change would be engaging?	P2
How important was it that... the change would be enjoyable?	P3
How important was it that... the change would be entertaining?	P4
How important was it that... the change would be fun?	P5
How important was it that... the change will allow me to do my own thing in my own way?	R1
How important was it that... the change would be innovative?	R2
How important was it that... the change would not be the same old thing?	R3
How important was it that... the change would break free from organization's usual norm?	R4
How important was it that... the change would challenge the status quo?	R5
How important was it that... the change helped me advance my career?	SM1
How important was it that... the change helped me succeed in my job?	SM2
How important was it that... the change promoted self-learning?	SM3
How important was it that... the change would help me improve my skills on the job?	SM4
How important was it that... the change would increase my performance at work?	SM5
How important was it that... the change would help me feel more appreciated as a person?	SS1
How important was it that... the change would allow me to feel emotionally safe?	SS2
How important was it that... the change would help me feel cared for by the organization?	SS3
How important was it that... the change would help me feel taken care of?	SS4
How important was it that... the change would make me feel the organization truly cares about me?	SS5
How important was it that... the change would allow the organization to reach its goals?	T1
How important was it that... the change would help the organization to achieve its goal?	T2
How important was it that... the change would help the organization to be successful?	T3
How important was it that... the change would redirect the organization to focus on achieving its goal?	T4
How important was it that... the change supported the goals of the organization?	T5

APPENDIX E

COMMITMENT TO CHANGE ITEM

Anchor	*Change behavior*	*Range*
Demonstrating opposition in response to a change by engaging in overt behaviors that are intended to ensure that the change fails.	Active Resistance	0-20
Demonstrating opposition in response to a change by engaging in covert or subtle behaviors aimed at preventing the success of the change.	Passive Resistance	21-40
Demonstrating minimum support for a change by going along with the change but doing so reluctantly.	Compliance	41-60
Demonstrating support for a change by exerting effort when it comes to the change, going along with the spirit of the change, and being prepared to make modest sacrifices.	Cooperation	61-80
Demonstrating extreme enthusiasm for a change by going above and beyond what is formally required to ensure the success of the change and promoting the change to others.	Championing	81-100

Adapted from Herschovich & Meyer (2002)

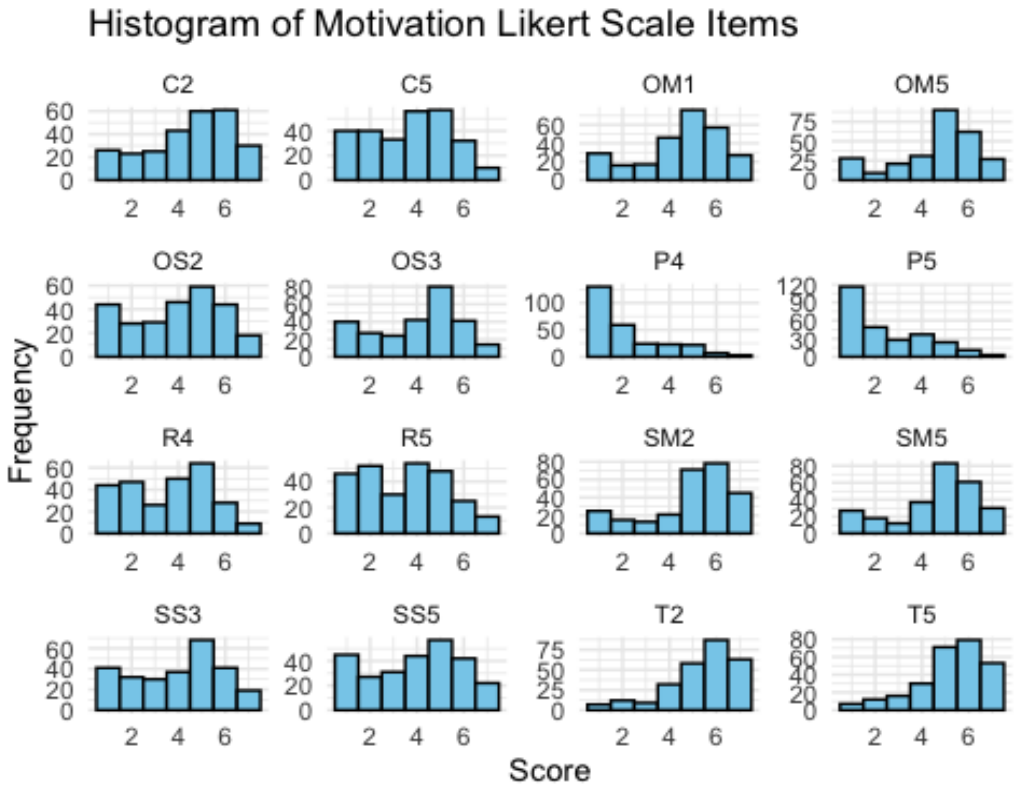
APPENDIX F

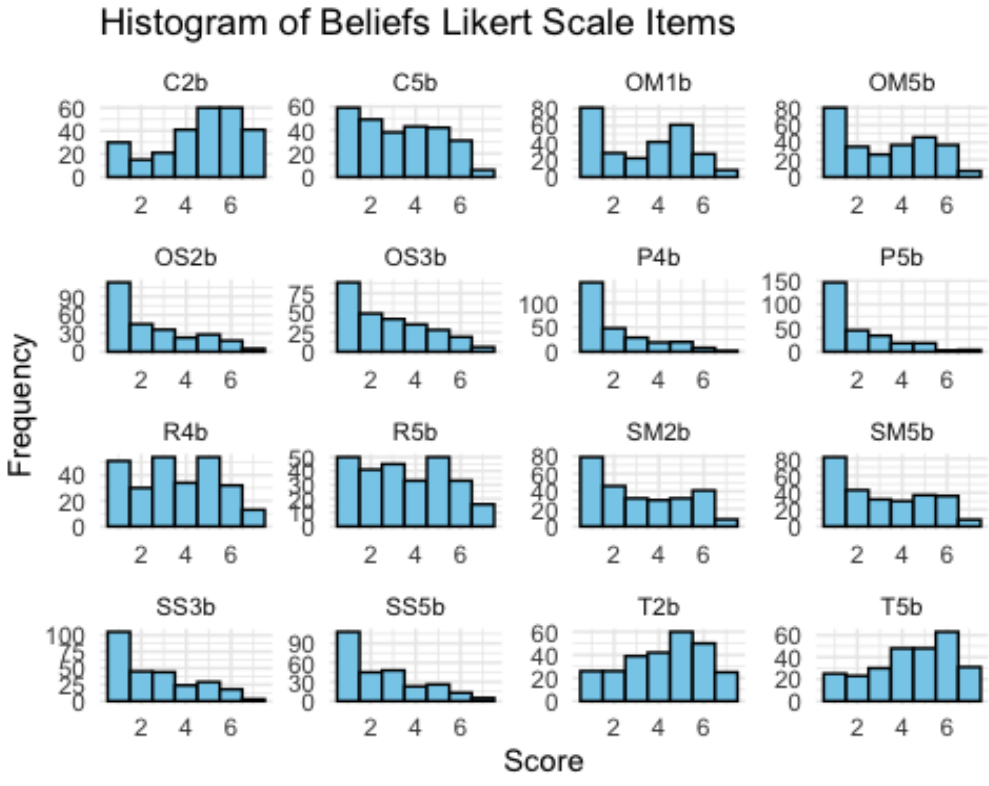
EMOTION TOWARD THE CHANGE ITEM

Anchor	*Level of Affect*	*Range*
Feeling completely overwhelmed and anxious, fearing job loss or significant negative impacts on daily work. This might include strong resentment towards the change, feeling helpless or hopeless about the future, or experiencing intense stress and frustration.	Extremely Negative	0-20
Feeling uneasy or skeptical about the change, with concerns about its necessity or potential outcomes. This might include discomfort with the new direction, minor anxiety about adapting to new processes, or feeling mildly disengaged.	Moderately Negative	21-40
Having mixed feelings or a wait-and-see attitude. This might include being unsure about the change's impact, neither strongly opposed nor in favor, or feeling that the change doesn't significantly affect one's own role.	Indifferent	41-60
Feeling cautiously optimistic or mildly supportive of the change. This could include a belief that the change might bring about some improvements, willingness to give it a chance, or a sense of mild enthusiasm about new opportunities.	Moderately Positive	61-80
Feeling highly enthusiastic and supportive of the change. This includes a strong belief in the benefits of the change, feeling energized and motivated by the new direction, or experiencing a sense of renewal and excitement.	Extremely Positive	81-100

APPENDIX G

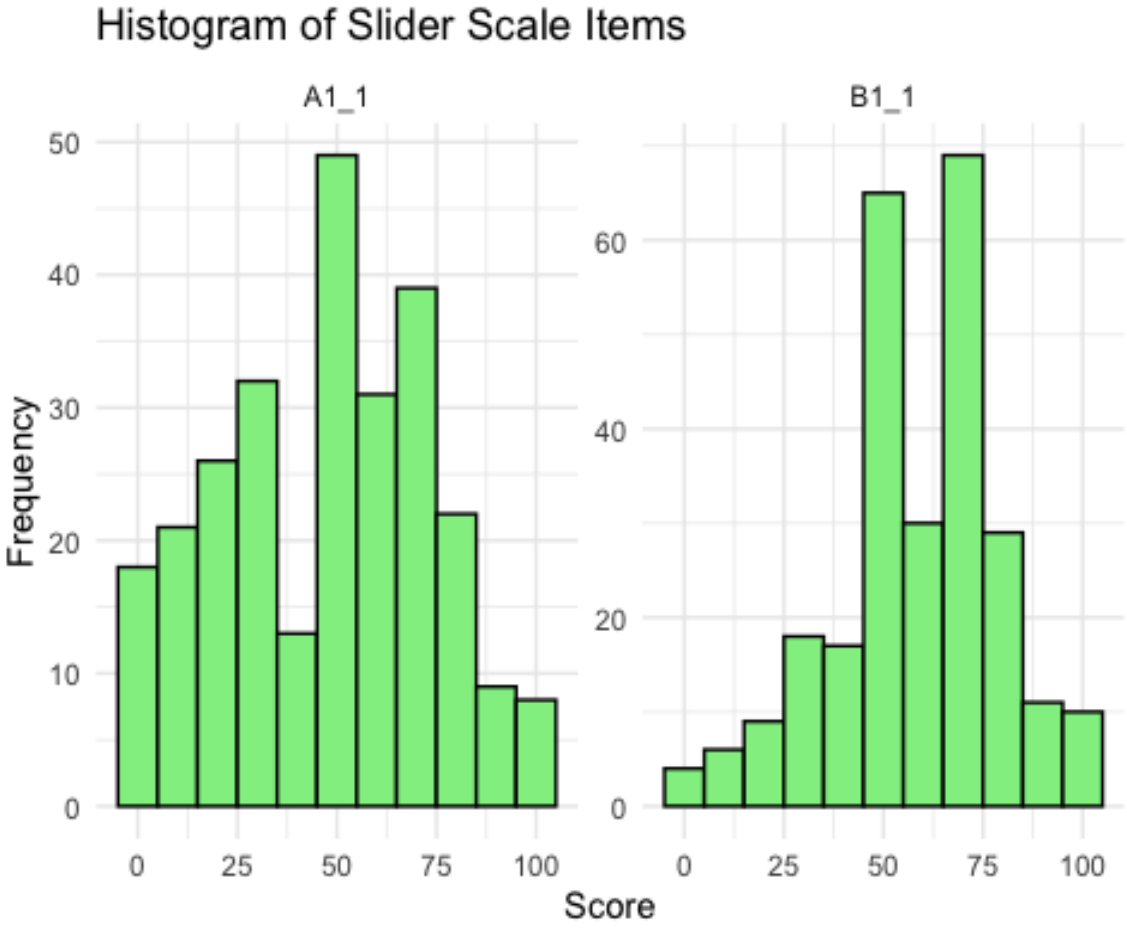
DISTRIBUTION FOR LIKERT SCALE ITEMS IN PHASE II SURVEY


Histogram of Motivation Likert Scale Items
C2
C5
OM1
OM5
OS2
OS3
P4
P5
R4
R5
SM2
SM5
SS3
SS5
T2
T5
Frequency
Score


Histogram of Beliefs Likert Scale Items
C2b
C5b
OM1b
OM5b
OS2b
OS3b
P4b
P5b
R4b
R5b
SM2b
SM5b
SS3b
SS5b
T2b
T5b
Frequency
Score

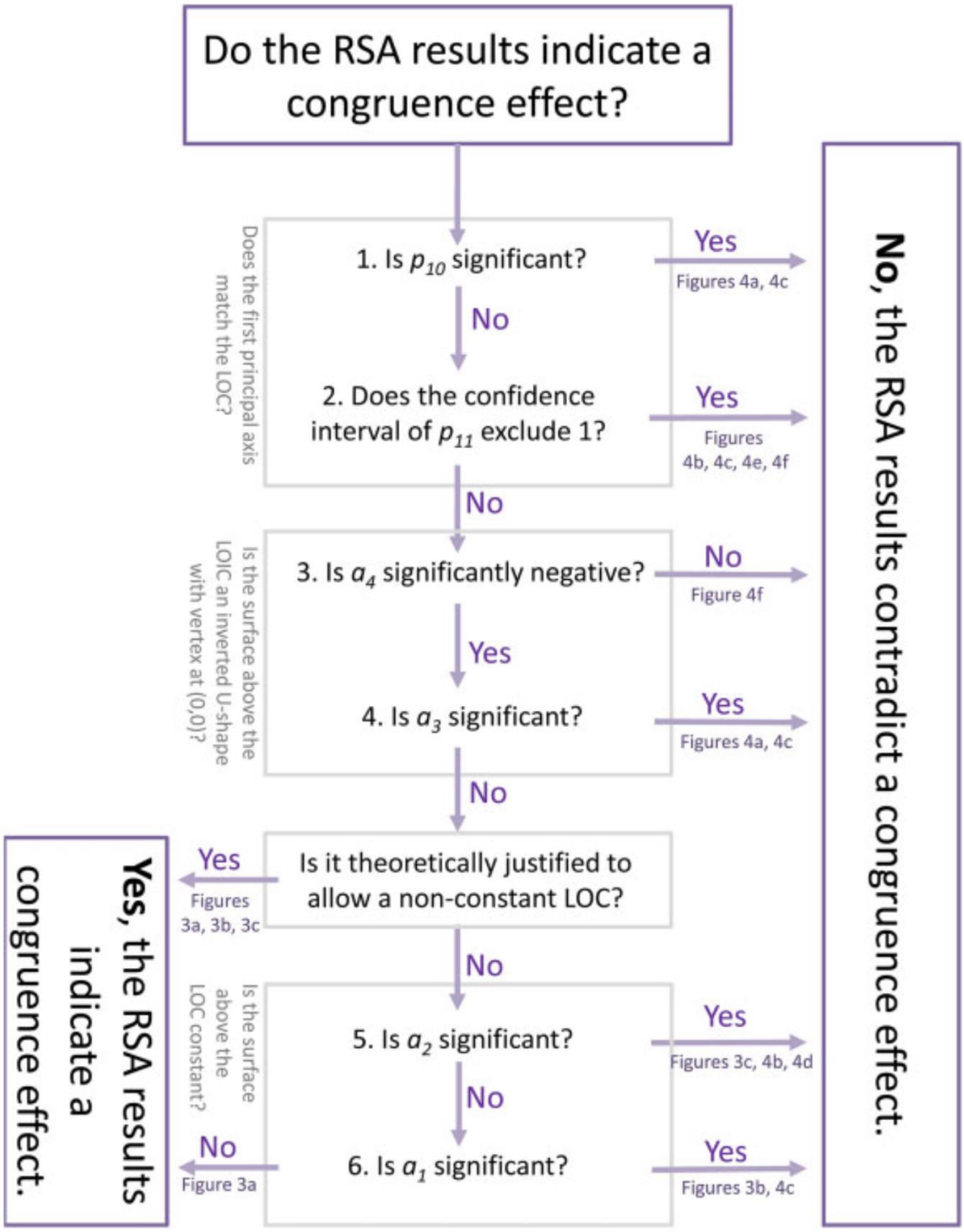
APPENDIX H

DISTRIBUTION FOR SLIDER SCALE ITEMS IN PHASE II SURVEY


Histogram of Slider Scale Items
A1_1
B1_1
Frequency
Score
0
10
20
30
40
50
60
0
25
50
75
100

APPENDIX I

CONGRUENCY CHECKLIST FROM HUMBERG ET AL., 2019


Do the RSA results indicate a congruence effect?
Does the first principal axis match the LOC?
1. Is p_{10} significant?
Yes
Figures 4a, 4c
No
2. Does the confidence interval of p_{11} exclude 1?
Yes
Figures 4b, 4c, 4e, 4f
No
Is the surface above the LOIC an inverted U-shape with vertex at (0,0)?
3. Is a_4 significantly negative?
No
Figure 4f
Yes
4. Is a_3 significant?
Yes
Figures 4a, 4c
No
Is it theoretically justified to allow a non-constant LOC?
Yes
Figures 3a, 3b, 3c
No
Is the surface above the LOC constant?
5. Is a_2 significant?
Yes
Figures 3c, 4b, 4d
No
6. Is a_1 significant?
Yes
Figures 3b, 4c
No
Figure 3a
No, the RSA results contradict a congruence effect.
Yes, the RSA results indicate a congruence effect.

APPENDIX J

HUMAN USE APPROVAL LETTER

LOUISIANA TECH
UNIVERSITY

OFFICE OF SPONSORED PROJECTS

EXEMPTION MEMORANDUM

TO: Mr. Sidney Thomas, Dr. Mitzi Desselles and Michelle Leong

FROM: Dr. Richard Kordal, Director of Intellectual Properties
rkordal@latech.edu

SUBJECT: **HUMAN USE COMMITTEE REVIEW**

DATE: **November 12, 2021**

TITLE: **"Measuring Support for Organizational Change"**

NUMBER: **HUC 22-037**

According to the Code of Federal Regulations Title 45 Part 46, your research protocol is determined to be exempt from full review under the following exemption category(s): 46.104 (a)(d)(1)(2)(i)(ii).

a) Unless otherwise required by law or by department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the categories in paragraph (d) of this section are exempt from the requirements of this policy, except that such activities must comply with the requirements of this section and as specified in each category.

(d) Except as described in paragraph (a) of this section, the following categories of human subjects research are exempt from this policy:

(1) Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

(ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation

Thank you for submitting your Human Use Proposal to Louisiana Tech's Institutional Review Board.