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Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven Organizational Change

Ngoc Dinh Nguyen
Minnesota State University Mankato

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Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven
Organizational Change

By

Ngoc D. Nguyen

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Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven Organizational Change

Ngoc D. Nguyen

This thesis has been examined and approved by the following members of the student's committee.

Dr. Lisa Perez

Dr. Andrea Lassiter

Dr. Kathleen Dale

Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven

Organizational Change

Nicki Nguyen, M.A.

Minnesota State University, Mankato

Title: Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven Organizational Change

Nicki Nguyen, M.A., Industrial and Organizational Psychology

Minnesota State University, Mankato

Abstract

The goal of this study was to test a multi-level model of organizational change that examined how various antecedents, employee reactions, and organizational and personal outcomes relate to one another. The research was conducted via online surveys and as a longitudinal study. Participants were employees at a large supply distribution company, and were a part of the Pilot implementation of a new Enterprise Resource Planning (ERP) system. Results from the study revealed that job stress was closely related to organizational commitment, job satisfaction, and psychological well-being, while change commitment was associated with higher organizational commitment and job satisfaction. Positive training reactions were linked to increased change commitment and organizational commitment, and change-specific self-efficacy also predicted commitment to change. Additionally, change self-efficacy and principal support significantly moderated the relationship between coping and organizational commitment. These results only partially supported the hypotheses of this study; thus, calling for further research in corroborating this model.

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Examination of the Antecedents, Reactions, and Outcomes to a Major Technology-driven
Organizational Change

In a dynamic world that is constantly changing, organizations must learn to adapt and embrace different strategies in order to stay competitive. Many organizations approach such challenges by implementing new technologies, distinctive change initiatives, or significant organizational restructuring. Regardless of the strategy, the impact of these changes on the organization and employees can be substantial. To many, a major organizational change is considered an arduous stressor.

Specifically, many studies have found that major organization changes are frequently tied to negative reactions and outcomes, such as decreased organizational commitment (Fedor, Caldwell, & Herold, 2006; Judge, Thoresen, Pucik, & Wellbourne, 1999; Schweiger & DeNisi, 1991), decreased job satisfaction (Begley & Czajka, 1993; Jimmieson, Terry, & Callan, 2004; Schweiger & DeNisi, 1991; Wanberg & Banas, 2000), increased reports of stress and anxiety (Ashford, 1988; Axtell, Wall, Stride, Pepper, Clegg, Gardner, & Bolden, 2002; Rafferty & Griffin, 2006), and increased turnover intentions (Oreg, 2006; Schweiger & DeNisi, 1991; Wanberg & Banas, 2000). Albeit, some studies also suggest that certain variables—select personality traits (e.g., self-efficacy, locus of control, etc.) and process characteristics (e.g., communication, principal support, etc.)—can either amplify or diminish these outcomes (Jimmieson et al., 2004).

Oreg, Vakola, and Armenakis (2011) conducted an extensive review of 79 quantitative studies, from 1948 to 2007, on organizational change and developed a three

level model of change recipients' reactions to organizational change. Their proposed categories were *antecedents* (further broken down to pre-change antecedents and change antecedents), *explicit reactions* (affective, cognitive, and behavioral), and *change consequences* (work-related and personal consequences). A visual of the model is provided in Figure 1. In general, the model purports that antecedent variables are linked to both explicit reactions and change consequences, and that explicit reactions are closely related to change consequences (Oreg et al., 2011).

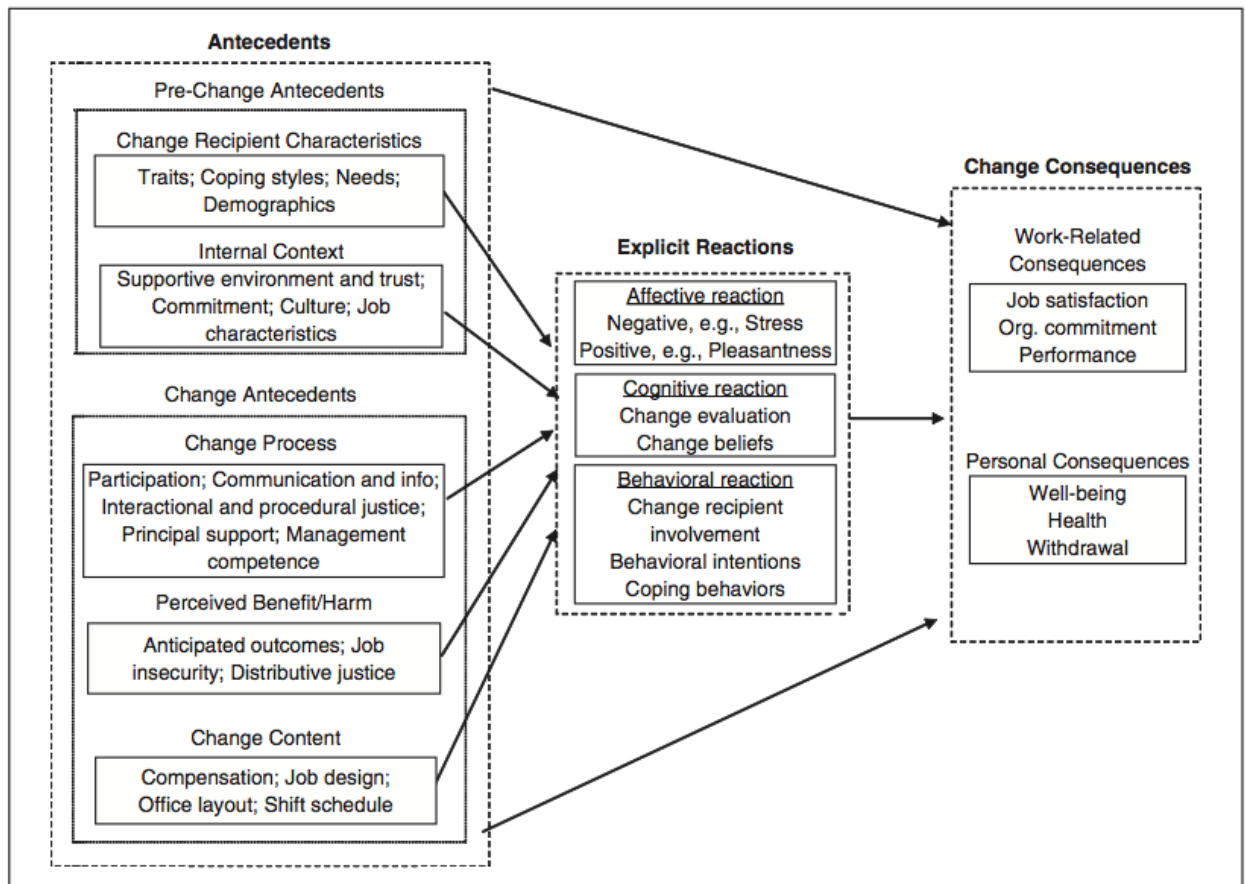


Figure 1. Model of Change Recipients' Reactions to Organizational Change (Oreg et al., 2011).

Given the suggestions of the extant literature, this study seeks to explore and confirm many of these relationships. Using Oreg et al. (2011)'s model as a guiding framework, this study aims to examine various change antecedents (general self-efficacy, change-specific self-efficacy, principal support, and training reactions), employees' reactions (job stress, commitment to change, and coping with change), and related outcomes (organizational commitment, job satisfaction, and psychological wellbeing) to a major technology-driven organizational change. More importantly, this study adds to the current literature by offering a comprehensive, multi-level analysis of organizational change. The following sections provide a review of the literature and background to the current study.

Literature Review

Work-related and Personal Outcomes

Although change interventions, such as new technology or company restructuring, are implemented to provide more advantages and benefits to an organization, employees generally view them as disruptions to work and added sources of stress (Fedor et al., 2006; Jimmieson et al., 2004). Large-scale organizational changes can lead to an increase in work demands and produce an atmosphere of uncertainty or apprehension (Ashford, 1988). This state of uncertainty is generally perceived as stressful and harmful to one's psychological wellbeing (Ashford, 1988; Pollard, 2001; Rafferty & Griffin, 2006; Schweiger & DiNisi, 1991).

Overall, the literature seems to suggest that organizational change is associated with a number of negative individual and organizational outcomes (Ashford, 1988; Fedor et al., 2006; Oreg et al., 2011; Pollard, 2001; Schweiger & DeNisi, 1991; Wanberg & Banas, 2002). However, one study found that greater levels of change acceptance can actually lead to higher job satisfaction, decreased intentions to quit, and fewer work irritations (Wanberg & Banas, 2002). In this study, I will attempt to examine the impact of change on employees, and whether certain factors can mitigate any potential negative effects.

Organizational Commitment

Research on organizational commitment has typically focused on employees' identification and feeling of attachment to the organization as a whole (Vakola & Nikolaou, 2005). Organizational commitment is one of the most commonly studied outcome variables in change research (Oreg et al., 2011), as it has been found to be related to many other important organizational outcomes, such as job performance, absenteeism, and turnover intentions (Fedor et al., 2006; Martin, Jones, & Callan, 2005). In general, the literature suggests that having committed employees result in more positive outcomes for organizations (Fedor et al., 2006).

Nonetheless, the event of an organizational change can adversely impact employees' organizational commitment levels (Schweiger & DeNisi, 1991), especially if the change is perceived as a negative transformation (Fedor et al., 2006). Conversely, when perceived as positive and beneficial for the organization, the change can actually lead to an increase in organizational commitment (Fedor et al., 2006; Vakola & Nikolaou,

2005). Organizational commitment has also been found to have a buffering effect on the relationship between change-related stress and job satisfaction, intent to quit, and work-related irritations (Begley & Czajka, 1993).

Although the literature persistently highlights the importance of organizational commitment as a significant outcome, it appears that there are mixed findings as to how change affects one's commitment. While some studies demonstrated that organizational change is negatively related to organizational commitment (Schweiger & DeNisi, 1991), others have shown that these variables can also be positively related (Fedor et al., 2006). Therefore, this study aims to investigate further the relationship between organizational change, organizational commitment, and some possible moderators.

Job Satisfaction

Job satisfaction is another outcome of interest that has been frequently studied in the organizational change literature (Oreg et al., 2011). In general, research shows that a major organizational change can significantly affect employees' level of job satisfaction (Begley & Czajka, 1993; Jimmieson et al., 2004; Schweiger & DeNisi, 1991; Wanberg & Banas, 2000). Specifically, studies have found that positive perceptions and acceptance of change were associated with higher job satisfaction (Wanberg & Banas, 2000), while negative attitudes were linked to lower job satisfaction and commitment (Schweiger & DiNisi, 1991).

In a longitudinal study, Begley and Czajka (1993) found that employees reported a decrease in job satisfaction and an increase in their intent to quit after a major organizational change. In particular, the level of uncertainty that results from the change

has been found to be a direct cause of the negative satisfaction outcomes (Rafferty & Griffin, 2006). That is, the greater the level of uncertainty, the lower job satisfaction is reported by employees (Rafferty & Griffin, 2006). Even more, researchers have also found that change-related work stressors, such as an increase in workload or change-related difficulties, have also resulted in a decline in job satisfaction (Jimmieson et al., 2004). Such findings suggest that major organizational changes can have a real harmful impact on job satisfaction if not handled well.

Psychological Wellbeing

Unlike organizational commitment, job satisfaction, and other work-related outcomes, personal consequences, such as psychological health and wellbeing, have been less commonly studied in the organizational change literature (Oreg et al., 2011). However, these individual outcomes should be considered as equally important since they are factors that might affect a person's ability to work at the end of the day.

Perceptions about organizational change, change self-efficacy, and perceived stress relative to a major organizational change were all found to be linked to psychological wellbeing (Martin et al., 2005). In a longitudinal study assessing mental wellbeing and physiological responses before and after a significant company reorganization, Pollard (2001) found that employees' wellbeing significantly declined after the announcement of the change and even 8-10 months into their new positions. Mental wellbeing dropped the lowest just right before the change and did not seem to recover thereafter. Additionally, the decline in psychological wellbeing was more severe for those who reported experiencing greater uncertainty (Pollard, 2011).

In a separate longitudinal study, Jimmieson and colleagues (2004) found that change-related work stressors (e.g., role ambiguity, change-related difficulties, and quantitative workload) were related to declines in psychological wellbeing, job satisfaction, and client engagement. However, it appeared that providing employees with more information relative to the change helped improve these outcomes. The authors also found that greater change-related self-efficacy was associated with better wellbeing, and higher job satisfaction and client engagement (Jimmieson et al., 2004). These findings highlight the grave personal consequences (i.e., significant decline in psychological wellbeing) that can result from a major organizational change. Thus, it is critical for organizations to look into ways to mitigate the distress that comes from these change initiatives.

Reactions to Change

Change reactions are differentiated from change outcomes in that they refer to more direct, explicit responses to change (Oreg et al., 2011). In other words, they refer to employees' beliefs, emotions, and intentions relative to change. Whereas a change outcome is an indirect consequence that is, in part, a result of the change (Oreg et al., 2011). It is important to consider employees' reactions because they ultimately drive an employee's decision to support or resist the change (Armenakis, Bernerth, Pitts, & Walker, 2007). Employee's attitudes, perceptions, and actions can directly affect the success of the implementation and adoption of the change (Armenakis et al, 2007).

As suggested earlier, different kinds of reactions exist. Reactions can be categorized as either affective, cognitive, or behavioral (Oreg et al., 2011). Within this

context, *affective reactions* refer to the psychological or emotional responses to the change, such as stress, anxiety, or depression. *Cognitive reactions* refer to the mental appraisal or beliefs about the situation (e.g., commitment or openness to change), while *behavioral reactions* refer to coping behaviors or intentions to take action, either in support of or in resistance to the change (Oreg et al., 2011). Ideally, organizations want their employees to have positive affective, cognitive, and behavioral reactions to a major organizational change. This would help ensure greater change acceptance, adoption, and readiness (Holt, Self, Thal, & Lo, 2003).

Job Stress (Affective Reaction)

Organizational change is considered a major stressor because it produces a state of uncertainty and disruption (Ashford, 1988; Pollard, 2001; Rafferty & Griffin, 2006). Employees may feel that the change is a threat to their current and future position in the company. In one longitudinal study, it was shown that the level of uncertainty and perceived disruption was related to an increase in stress both prior to the organizational change and six months after (Ashford, 1988). In another study, also longitudinal, the researchers found that the level of stress and perceived uncertainty significantly increased from the time the change was announced to when the change was implemented, and continued to persist four months after (Rafferty & Griffin, 2006).

Beyond experiences of uncertainty, times of drastic change are also plagued with increased prevalence of rumors and gossip (Bordia, Jones, Gallois, Callan, & Difonzo, 2006). These negative communication outlets can be extremely harmful to the organization and social morale. One study found that employees exposed to negative

rumors as a result of an organizational change reported higher levels of stress (Bordia et al., 2006). Furthermore, employees held more negative attitudes toward the organizational change when there was added stress from work overload, unfair compensation, and poor work relationships (Vakola & Nikolaou, 2005). However, positive attitudes toward the change were negatively related to overall job stress (Vakola & Nikolaou, 2005). As these results suggest, organizational change is a significant event that leads to an increase in perceived uncertainty and job stress.

Commitment to Change (Cognitive Reaction)

Commitment to change is characterized by not only a positive appraisal of the change but also a cognitive intent to support the change (Fedor et al., 2006). In a study examining the effects of change on organizational and change commitment, Fedor and colleagues (2006) found that commitment to the change was highest when employees perceived the change as positive and work demands to be relatively low. In contrast, when the organizational change led to an increase in job demands, individuals were more likely to experience fear, hold negative attitudes, and feel less committed to the change (Fedor et al., 2006). This relationship can be attributed to the close ties between job demands and experiences of stress (Karasek, 1979).

Herscovitch and Meyer's (2002) three-component model is one of the most popular taxonomies of commitment, and includes affective, continuance, and normative commitment to change. The model was developed under the assumption that different beliefs and goals will lead to different kinds of commitment to change (Bouckennooghe, Schwarz, & Minbashian, 2015). Meta-analytic results revealed that affective and

normative commitment were positively related to behavioral support of the change. More specifically, affective commitment was linked to cooperation, compliance, and championing behavior (Bouckennooghe et al., 2015). For that reason, it is of my particular interest to investigate affective commitment to change and its relations to some of the change outcomes.

Coping with Change (Behavioral Reaction)

While some studies on organizational change choose to mainly pay attention to negative reactions, such as resistance and cynicism (Oreg et al., 2011), it is just as important to focus on positive reactions and coping behaviors. Ashford (1988) asserted that most of the employees in an organization undergoing change are simply trying to endure and adapt to the transition rather than actively trying to resist. Therefore, it may be more practical and beneficial to concentrate research efforts on coping abilities and commitment.

In a study looking at the effects of certain dispositional traits and coping abilities on career outcomes, Judge et al. (1999) found that one's ability to cope with change was a significant predictor of many career outcomes, including job performance, organizational commitment, and job satisfaction. Specifically, successful coping was associated with higher organizational commitment, job satisfaction, performance, and salary (Judge et al., 1999). In a different study, examining the effects of coping resources and coping responses on change-induced stress, Ashford (1988) found that certain coping mechanisms—specifically, perceived personal control, tolerance for ambiguity, and sharing one's feelings—helped buffer the amount of stress experienced by employees.

These findings highlight the importance of one's coping abilities and reactions in mitigating the potentially harmful effects of such a significant stressor.

Hypothesis 1

Given what we know about organizational change and its effect on recipients' reactions and employee outcomes, it is hypothesized that negative change reactions will be linked to negative change outcomes. Specifically:

H1a: Experiences of stress at Time 2 (T2; post-change implementation) will be negatively related to organizational commitment (T2), job satisfaction (T2), and wellbeing (T2).

H1b: Commitment to change (T2) will be positively related to organizational commitment (T2), job satisfaction (T2), and wellbeing (T2).

H1c: Coping with change (T2) will be positively related to organizational commitment (T2), job satisfaction (T2), and wellbeing (T2).

Antecedents to Change

According to Oreg et al. (2011), *change antecedents* are considered the underlying causes behind a change recipient's reactions. Antecedent variables are said to be prescriptive of the explicit reactions and indirect outcomes that result from change (Oreg et al., 2011). That is, in looking at these variables, we may be able to predict the direction and possible magnitude of the reactions and outcomes employees will have to a major organizational change.

In their review, Oreg et al. (2011) identified five categories of change antecedents: 1) change recipient characteristics, 2) change process, 3) internal context, 4)

change content, and 5) perceived benefit/harm. Furthermore, they discriminate between “*prechange antecedents*,” which are variables that are outside of the change (e.g., employee characteristics), and “*change antecedents*,” features of the change that can affect recipients’ reactions.

However, in this study, I am mainly interested in examining a few key dispositional characteristics and change context variables that I expect to be most influential in predicting employee reactions and outcomes to a major organizational change. Specifically, I will explore the influences of general self-efficacy, change-specific self-efficacy, principal support, and training reaction on the aforementioned reactions and outcomes. For the sake of simplicity, all four variables will be grouped under the category of “change antecedents.” General self-efficacy and change-specific self-efficacy are classified as change recipient characteristics, while principal support and training reactions are change context variables that are considered as antecedents to the change. I anticipate that these variables will have both a direct main effect on the various reactions and outcomes, and an indirect (moderating) effect on the relationship between change reactions and outcomes.

General Self-efficacy

Self-efficacy, as defined by Bandura (1997), refers to the “beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments.” Bandura (1997; 2002) contends that self-efficacy beliefs significantly influence whether people think positively or negatively about the world, are motivated and perseverant, and whether they believe in their coping abilities. More specifically,

people with high self-efficacy are generally thought of as being more capable of handling difficult tasks and situations. They are more likely to exert greater effort, set higher goals, and approach challenges as learning opportunities rather than threats. Individuals who are highly efficacious also tend to be more impervious to stressors.

In contrast, people low in self-efficacy tend to doubt their capabilities, avoid difficult tasks, and approach threatening situations with less motivation and effort (Bandura, 2002). In their study, Judge et al. (1999) found that generalized self-efficacy was positively related to coping with change, organizational commitment, and job satisfaction. It is possible that certain dispositional traits matter more than behavioral intent when it comes to coping with organizational change stressors (Ashford, 1988). Therefore, it is important to explore the effects of such characteristics as self-efficacy.

Change-specific Self-efficacy

Wanberg and Banas (2000) defined *change-specific self-efficacy* as “an individual’s perceived ability to handle change in a given situation and to function well on the job despite demands of the change.” This concept goes beyond that of general self-efficacy, to describe the belief in one’s ability to perform within the specific context of change. Thus, I would expect employees to be better able to adapt and cope with a major change if they had higher change-related self-efficacy.

In a longitudinal study, Wanberg and Banas (2000) found that higher change-specific self-efficacy was associated with greater change acceptance. Similarly, Martin et al. (2005) also found that change self-efficacy was a significant predictor of a number of adjustment outcomes, namely, job satisfaction, psychological wellbeing and

organizational commitment. Change-specific efficacy was also found to be linked to reduced experiences of stress and more problem-focused coping strategies (Ashford, 1988; Jimmieson et al., 2004). Additionally, change-related self-efficacy helped buffer the negative impact of change-related work stressors on job satisfaction and employee adjustment (Jimmieson et al., 2004). These findings imply that change-specific self-efficacy is a strong determinant of employee acceptance and adjustment to organizational change.

These results align well with Bandura's (1997) proposition, which asserts that self-efficacy plays a critical role in how one chooses to approach novel and difficult situations. As mentioned earlier, individuals prefer to take on tasks that they perceive are within their capabilities and are more likely to avoid or resist a task or situation if they believe it exceeds their capabilities (Armenakis et al., 2007). Therefore, it would be expected that employees with higher change-specific self-efficacy will have more confidence in their abilities to cope with the change and make the transition.

Principal Support

Principal support refers to "the extent to which one perceives formal and informal leaders in the organization support the change" (Holt et al., 2003). Armenakis et al. (2007) and Holt et al. (2003) posit that in order for members to accept and adopt a major organizational change, they need to recognize that the change is not only appropriate for the organization and personally beneficial, but also well supported by leadership. Moreover, some researchers consider leader support to be a valuable coping resource (Rafferty & Griffin, 2006).

In a two-study series design, Martin et al. (2005) found that supervisor support was positively related to perceived change control, change self-efficacy, organizational commitment, psychological wellbeing, job satisfaction, and negatively related to perceived stress. Rafferty and Griffin (2006) also found that employees who had more supportive leaders experienced less uncertainty during a time of change than those under unsupportive leaders. Furthermore, employees reported more positive appraisal of the change and showed greater organizational commitment when they perceived their leaders as having a clear and enthusiastic vision for the future of the organization (Martin et al., 2005). Given these results, I expect principal support to be related to more positive change reactions and outcomes.

Training Reaction

With respect to organizational change, training serves as an important tool and source of information for employees (Staples, 2009). For many change initiatives, organizations will provide some form of training to help employees learn about what is changing, what the new processes are, and how to adopt and integrate these new practices into their existing role. Thus, training plays a pivotal role in educating employees on the change and providing them with the knowledge and resources to move forward.

The main purpose of training is to facilitate learning and the acquisition of job-related knowledge and skills (Noe, 2010). Beyond education, training has also been used as a strategy to improve performance and business results (Noe, 2010). In a study examining the effects of training reactions, performance, and fulfillment on a number of outcomes, Tannenbaum, Mathieu, Salas and Cannon-Bowers (1991) discovered that

positive training reactions were related to higher posttraining commitment, motivation, and self-efficacy. Similarly, a meta-analytic study by Sitzmann, Brown, Casper, Ely, and Zimmerman (2008) indicated that training reactions were significant predictors of post-training motivation, self-efficacy, declarative knowledge, and procedural knowledge. More specific to organizational change, one study found that training reactions, both affective and cognitive, significantly predicted commitment to change (Staples, 2009).

Given some of these results, we would expect that employees' reactions to training would play a critical role in how they perceive and react to the organizational change. However, in the organizational change and change management literature base, very little research has been conducted to explore the impact of training on change outcomes. In this study, I attempt to fill this gap in the literature by examining the relationship between training reactions and the different change reactions and outcomes. I will investigate whether training reactions (whether employees were satisfied with their training and perceived it as helpful) will be associated with more positive change outcomes (e.g., increase in job satisfaction, organizational commitment, etc.) and reactions (e.g., increase in commitment to change, coping, etc.)

Hypothesis 2

Based on the existing literature on these antecedent variables, I hypothesize that antecedents will be positively related to change outcomes. Specifically, I propose the following:

H2a: General self-efficacy at Time 1 (T1; pre-change implementation) will be positively related to T2 assessments of organizational commitment, job satisfaction, and wellbeing.

H2b: Change-specific self-efficacy (T1) will be positively related to T2 assessments of organizational commitment, job satisfaction, and wellbeing.

H2c: Principal support (T1) will be positively related to T2 assessments of organizational commitment, job satisfaction, and wellbeing.

H2d: Training reactions (T2) will be positively related to T2 assessments of organizational commitment, job satisfaction, and wellbeing.

Hypothesis 3

Additionally, antecedents will be positively related to cognitive and behavioral reactions, and negatively related to affective reactions.

H3a: General self-efficacy (T1) will be positively related to commitment to change and coping (T2), but negatively related to job stress (T2).

H3b: Change-specific self-efficacy (T1) will be positively related to commitment to change and coping (T2), but negatively related to job stress (T2).

H3c: Principal support (T1) will be positively related to commitment to change and coping (T2), but negatively related to job stress (T2).

H3d: Training reaction (T2) will be positively related to commitment to change and coping (T2), but negatively related to job stress (T2).

Hypothesis 4

Lastly, I hypothesize that antecedents will moderate the relationships between change reactions and change outcomes.

H4a: General self-efficacy (T1) will moderate the relationships between change reactions (job stress, commitment to change, and coping) and the change consequences (organizational commitment, job satisfaction, and wellbeing) in that higher general self-efficacy will amplify the hypothesized relationships between the variables.

H4b: Change-specific self-efficacy (T1) will moderate the relationships between the explicit reactions (stress, affective commitment, and coping) and the change consequences (organizational commitment, job satisfaction, and wellbeing) in that higher change-specific self-efficacy will amplify the hypothesized relationships between the variables.

H4c: Principal support (T1) will moderate the relationships between the explicit reactions (stress, affective commitment, and coping) and the change consequences (organizational commitment, job satisfaction, and wellbeing) in that higher principal support will amplify the hypothesized relationship between the variables.

H4d: Training reactions (T2) will moderate the relationships between the explicit reactions (stress, affective commitment, and coping) and the change consequences (organizational commitment, job satisfaction, and wellbeing) in that higher training satisfaction will amplify the hypothesized relationship between the variables.

Proposed Model

In the present study, I adopted Oreg et al.'s (2011) *Change Recipient Reactions to Organizational Change Model* to help hypothesize the relationships between the different variables of interest. First, I sought to examine three kinds of reactions from employees: affective, cognitive, and behavioral. Affective reaction was assessed through perceived job stress, cognitive reaction through commitment to change, and behavioral reaction through coping with change. As the literature advised, employees' reactions play a critical role in the successful implementation and adoption of change. Therefore, I wanted to be comprehensive in my survey and explore all three types of reactions.

Second, organizational change is shown to be closely associated with organizational commitment, job satisfaction, and psychological wellbeing. These outcomes have been researched often; however, none of the empirical studies distinguished reactions and outcomes as separate stages of change consequences. In this study, I differentiate these three variables from the change reactions and assess them as indirect change outcomes.

Lastly, many authors pushed the importance of self-efficacy, both general and change-specific self-efficacy, and supervisor support in managing the effects of organizational change. According to Oreg et al.'s (2011) model, these variables are considered change antecedents because they can influence the reactions and outcomes that result from an organizational change. In accordance, I also group these variables, along with training reactions, as change antecedents and examine their direct and indirect

relationships with the change reactions and outcomes. A model of the hypothesized relationships between the different variables is presented in Figure 2.

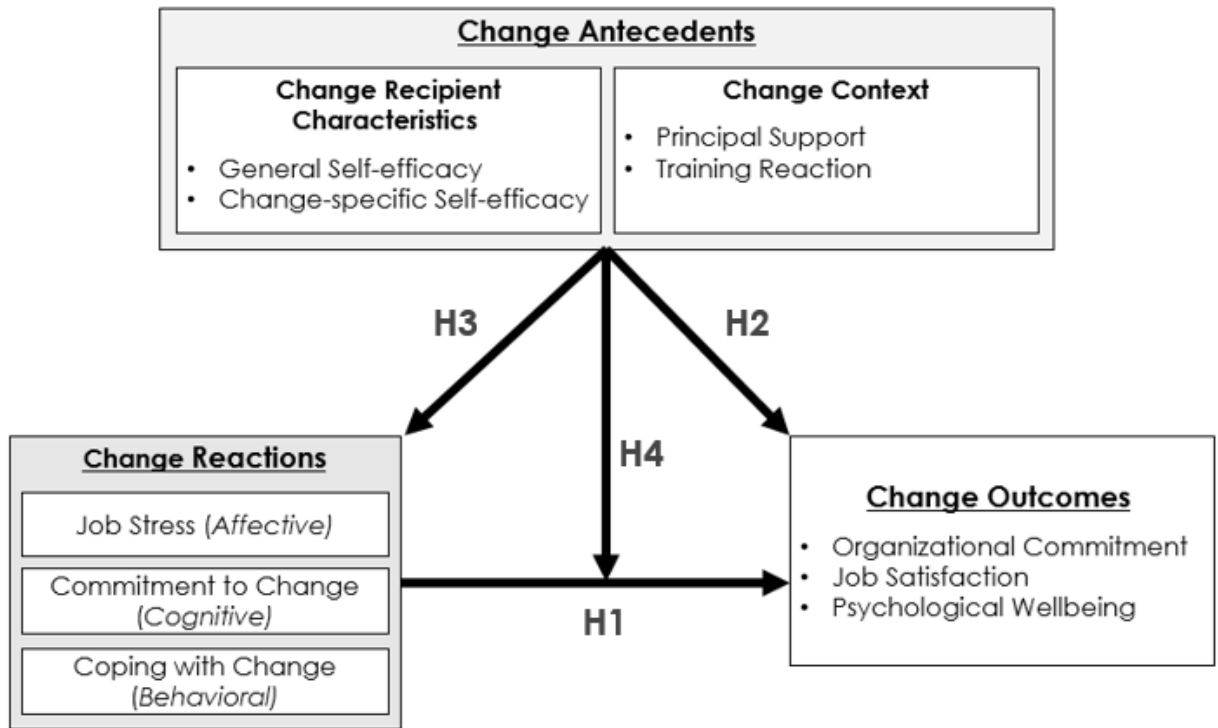


Figure 2. Proposed model of the hypothesized relationships between change antecedents, reactions, and outcomes.

Method

Organizational Setting

The research was conducted at a large dental and veterinary supplies distribution organization that was going through a major internal technology change. Specifically, this organization was implementing a new Enterprise Resource Planning (ERP) system, called “SAP.” The SAP implementation process was to happen in five phases over the

course of two years. The first phase, known as “Pilot,” was deployed to employees in selected locations on February 1st, 2016. Training for Pilot employees took place in January, and was coordinated and delivered by functionality.

Procedure

Participants from within the Pilot locations received an email from the Vice President of Organizational Change Management and Deployment with a link to the survey. They were informed in both the recruitment email and survey description that participation was voluntary and responses would be kept confidential. The email recruitment script, informed consent, and survey items can be viewed in Appendix A through D.

Data were collected via online surveys through Qualtrics. Participants were surveyed at two different times: Time 1 at approximately eight weeks before the change and Time 2 at seven weeks after the technology implementation. The only identifying information that was collected were email addresses, for the purpose of pairing responses from Time 1 to Time 2, and were removed once the pairing was completed. All of the antecedent variables, except for training reaction, were assessed at Time 1. All of the change reactions and change outcomes (job stress, commitment to change, coping with change, job satisfaction, organizational commitment, and psychological wellbeing) were assessed at both Time 1 and 2. Training reaction was the only change antecedent measured at Time 2. Table 1 displays the times at which each measure was assessed.

Table 1

Times at which each measure was assessed

Category	Measure	Time
Change Antecedents	General Self-Efficacy	1
	Change-specific Self-Efficacy	1
	Principal Support	1
	Training Reaction	2
Change Reactions	Job Stress	1, 2
	Commitment to Change	1, 2
	Coping with Change	1, 2
Change Outcomes	Organizational Commitment	1, 2
	Job Satisfaction	1, 2
	Psychological Wellbeing	1, 2

Participants

There were a total of 314 responses for the pretest survey (T1; pre-change) and 231 responses for the posttest survey (T2; post-change); however, there were only 63 valid cases after merging the data from both surveys. The sample ($N=63$) consisted of 46% females and 54% males, and more than half of the participants were over the age of 40 years old (68.2%). Participants in this study were employees from the nine site locations that were a part of the Pilot phase. Pilot locations included two corporate offices, two distribution centers, and five branch offices. Participants' job functions included corporate finance, IT, sales, customer service, service technicians, and warehouse order fillers and receivers. Tables 2a-g display the demographic features of the participants included in this study.

Table 2a

Gender of participants

Gender	Frequency	Percent
Female	29	46.0
Male	34	54.0

N=63

Table 2b

Age of participants

Age	Frequency	Percent
Under 20 years old	0	0.0
Between 20-29 years old	5	7.9
Between 30-39 years old	15	23.8
Between 40-49 years old	20	31.7
Between 50-59 years old	15	23.8
60 or above	8	12.7

N=63

Table 2c

Participants' job level

Job Level	Frequency	Percent
Non-manager	50	79.4
Manager	10	15.9
Director or Senior Leadership	3	4.8

N=63

Table 2d

Participants' time at the company

Time at Company	Frequency	Percent
Less than 1 year	4	6.3
1-5 years	20	31.7
6-10 years	9	14.3
11-15 years	13	20.6
16-20 years	9	14.3
21 or more years	8	12.7

N=63

Table 2f

Participants' job function

Job Function	Frequency	Percent
Administrative	4	6.3
Sales / Territory Rep / Technology Adviser / Equipment Specialist	21	33.3
Customer Service Representative	3	4.8
Service Technician (Service/Parts/Equipment Coordinator)	5	7.9
Finance/Accounting-related Functions	3	4.8
Procurement	2	3.2
Information Technology	10	15.9
Marketing	6	9.5
Leadership (Manager, Director, etc.)	9	14.3

N=63

Table 2g

Participants' work location

Location	Frequency	Percent
MN Corporate Office	25	39.7
MA Corporate Office (Vet)	3	4.8
South Bend, IN (Warehouse)	1	1.6
Cincinnati, OH	4	6.3
Detroit, MI	10	15.9
Indianapolis, IN	9	14.3
Portland/Medford, OR	6	9.5
Everett, WA (Vet Call Center)	1	1.6
Vet Pacific Northwest (Branch)	1	1.6
Other	3	4.8

N=63

Measures

General self-efficacy. General self-efficacy was measured using the Generalized Self-Efficacy Scale (GSE; Schwarzer & Jerusalem, 1995). The scale includes 10 items and uses a 4-point scale, from 1 = *Not at all true* to 4 = *Exactly true*. An example of an

item on the scale is: “I can always manage to solve difficult problems if I try hard enough.” This measure is used to assess general self-efficacy and does not comprise any context-specific questions. This scale had a reliability coefficient alpha of .82.

Cronbach’s alpha for all variables are displayed in Table 3.

Change-specific self-efficacy. For examining self-efficacy specific to change adaptation, the Efficacy subscale of the Organizational Change Recipients’ Belief Scale (OCRBS; Armenakis et al., 2007) was used. “I can implement this change in my job” was one of the items in this subscale. Because the developers did not specify what type of scale should be used with the measure, I defaulted to using a 5-point scale, from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. Some items were slightly modified to explicitly state the context of the change (i.e., SAP implementation). The scale had a reported Cronbach’s alpha of .82.

Principal support. The Principal Support subscale, also from the Organizational Change Recipients’ Belief Scale (OCRBS; Armenakis et al., 2007), was used to assess principal support. Again, because a scale for the measure was not originally specified, a 5-point scale was used (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Several items on this scale were also modified to clarify the context of the change. For example, one of the item stated, “My immediate manager is in favor of this change to SAP.” The principal support subscale had reported coefficient alpha of .89.

Training reaction. Because there was not an existing training reaction questionnaire that was appropriate for the purpose of this study, I created my own measure. Three items were constructed to assess training reactions and were measured on

a 5-point Likert scale, 1 = *Strongly Disagree* to 5 = *Strongly Agree*. One of the items was: “I was very satisfied with the training that was delivered.” All survey items can be seen in full in Appendix B. An alpha of .93 was reported for this scale.

Job stress. Job stress was assessed using the Job Stress subscale from the Measure of Job Attitudes inventory (Lambert & Paoline, 2010). The scale consists of six items that were measured on a 5-point scale, 1 = *Strongly Disagree* to 5 = *Strongly Agree*. An example of one of the items is “When I’m at work I often feel tense or uptight.” The job stress scale had a coefficient alpha of .85 at Time 1 and .82 at Time 2.

Commitment to change. The Affective Commitment to Change subscale of the Commitment to Change Scale (ACC; Herscovitch & Meyer, 2002) was used to measure commitment to change. Items in this measure were assessed on a 7-point Likert scale, from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. Again, some items were slightly modified to make them more specific to the SAP implementation context. For example, “I believe in the value of this change” is one of the items in the scale. A Cronbach’s alpha of .97 was reported at Time 1 and .94 at Time 2.

Coping with change. A four-item measure was created to examine the construct of coping with change. The items were drafted based on some of the items from the Coping with Change Scale (Judge et al., 1999). Similar to Judge et al.’s (1999) measure, a 5-point scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*) was used for these items. One of the item states: “When the change was announced, I tried to react in a problem-solving, rather than an emotional, mode.” This scale had a reliability coefficient of .70 at Time 1 and .54 at Time 2.

Organizational Commitment. A two-item scale, which was a part of the Measures of Job Attitudes inventory (Lambert & Paoline, 2010), was used to survey organizational commitment. The two items are: “I am proud to tell others that I am part of this organization” and “This job really inspires the best in me in the way of job performance.” Both items were measured on a 5-point Likert scale, 1 = *Strongly Disagree* to 5 = *Strongly Agree*. The Cronbach’s alpha for the subscale was .66 at both times of measure.

Job Satisfaction. Job satisfaction was assessed using one item: “All in all, how satisfied are you with your job?” The item is measured on a 5-point scale, from 1 = *Very Dissatisfied* to 5 = *Very Satisfied*. Given that there was only one item for measuring job satisfaction, a reliability analysis was not conducted.

Psychological Wellbeing. Lastly, psychological wellbeing was assessed using an abbreviated version of the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). Instead of the original 14 items, only four of the items were used. The items were measured on a 5-point scale, 1 = *Never* to 5 = *Very Often*. Although this scale was created to examine experiences of stress, the selected items also seemed appropriate to measure psychological wellbeing. For example, one of the items asked: “In the last month, how often have you felt confident in your ability to handle your personal problems?” A reliability coefficient of .64 was reported at Time 1 and .71 at Time 2.

Table 3

Reported Cronbach's alpha for all measures

Variable	T1 Alpha	T2 Alpha
General Self-Efficacy	.82	
Change-specific Self-Efficacy	.82	
Principal Support	.89	
Training Reaction		.93
Job Stress	.85	.82
Commitment to Change	.97	.94
Coping with Change	.61 ^a	.70 ^a
Organizational Commitment	.66	.66
Job Satisfaction	-	-
Psychological Wellbeing	.64	.71

Note: Reliability analyses were rerun after modifying the scale items^a

Results

Preliminary Analysis

All but the Coping with Change scale had good to acceptable reported reliability. On further reflection of the scale items, it was decided that two of the items did not truly align with the construct of “coping with change.” The items (“I have been a leader of transformation efforts in the transition to SAP” and “I often find myself leading change efforts in this company”) seem to be more representative of “change leadership” rather than coping behaviors. Thus, the measure was reduced to a 2-item scale with just the items: “When we implemented the new SAP system, I reacted by trying to manage the change rather than complain about it” and “When the change was announced, I try to react in a problem-solving, rather than an emotional, mode.” The new reliability coefficients for the items are presented in Table 3. In addition, descriptive statistics for all measures are presented in Table 4 and a correlation matrix is provided in Table 5.

Tests of Hypotheses

In examining Hypothesis 1, multiple regression analyses were used to test whether employee reactions (i.e., commitment to change, coping with change, and job stress) predicted change outcomes (i.e., organizational commitment, job satisfaction, and psychological wellbeing). Results indicated that commitment to change ($\beta=.31, p=.002$) and job stress ($\beta=-.53, p<.001$) were significant predictors of organizational commitment, $R^2=.52, F(3, 59)=21.53, p<.001$, but coping was not. Similarly, commitment to change ($\beta=.35, p=.001$) and job stress ($\beta=-.52, p<.001$) also significantly predicted job satisfaction, $R^2=.53, F(3, 59)=21.70, p<.001$, while coping did not. As for psychological wellbeing, only job stress ($\beta=-.74, p<.001$) was a significant predictor of this outcome, $R^2=.54, F(3, 59)=23.06, p<.001$. Coping was not a significant predictor for any of the outcome variables. These results show partial support for Hypothesis 1, that positive reactions will be associated with positive change outcomes. All regression coefficients can be viewed in Table 6.

For Hypothesis 2, change outcomes were regressed on antecedent variables (i.e. general self-efficacy, change-specific self-efficacy, principal support, and training reactions). Results found that only training reactions ($\beta=.30, p=.018$) was a significant predictor of organizational commitment, $R^2=.22, F(4, 54)=3.76, p=.00$. None of the antecedents were significant predictors of job satisfaction or well-being. Hypothesis 2, that antecedents will be positively correlated with outcome variables, was largely not supported. Regression results are shown in Table 6.

Hypothesis 3 posited that change antecedents would be positively related to commitment to change and coping, and negatively related to job stress. Results from the multiple regression analyses show partial support for this hypothesis. Specifically, change-specific self-efficacy ($\beta=.31, p=.035$) and training reactions ($\beta=.35, p=.002$) were found to be significant predictors of commitment to change, $R^2=.39, F(4, 54)=8.58, p<.001$, but not the other two reactions (i.e. coping and job stress). None of the change antecedents predicted coping with change or job stress. Furthermore, general self-efficacy and principal support were not significant predictors of any change reactions. Table 7 displays the results from the regression analysis.

To test Hypothesis 4, nine moderated regression analyses were conducted to determine whether the antecedent variables moderated the relationship between change reactions and outcomes. There were only two significant moderation effects detected. Change self-efficacy ($\beta=.71, p=.004$) and principal support ($\beta=-.70, p=.002$) moderated the relationships between coping and organizational commitment, $R^2=.37, F(9, 49) = 3.16, p = .03$. The relationship between coping, organizational commitment and change-specific self-efficacy is demonstrated in Figure 3, and principal support is demonstrated in Figure 4. There was no moderation effect observed for general self-efficacy or training reaction on coping and organizational commitment. Also, none of the antecedent variables had a significant effect on the relationship between commitment to change and job stress and the outcome variables. Results from the moderated regression analyses are presented in Tables 8a-i; they provide partial support for Hypothesis 4.

Table 4

Descriptive statistics for all variables in this study

Variable	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>
Commitment with Change (T1)	63	19	42	36.84	6.19
Commitment with Change (T2)	63	7	42	32.05	8.70
Coping with Change (T1)	63	6	10	8.65	1.19
Coping with Change (T2)	63	5	10	8.52	1.20
Change-specific Self-Efficacy	63	14	25	21.21	3.08
General Self-Efficacy	59	29	40	35.42	3.28
Organizational Commitment (T1)	63	5	10	8.73	1.22
Organizational Commitment (T2)	63	4	10	8.11	1.56
Principal Support	63	16	30	25.19	3.41
Job Satisfaction (T1)	63	1	5	4.35	.99
Job Satisfaction (T2)	63	1	5	3.84	1.25
Job Stress (T1)	63	7	28	15.14	4.45
Job Stress (T2)	63	6	28	14.79	4.33
Training Reaction	63	3	15	6.90	3.01
Psychological Wellbeing (T1)	63	11	20	16.51	2.31
Psychological Wellbeing (T2)	63	6	20	15.41	3.08

Table 5

Correlation matrix of all variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Change Commit. (T1)																
2. Change Commit. (T2)	.59***															
3. Coping (T1)	.40**	.15														
4. Coping (T2)	.33**	.02	.57***													
5. Change Self-Efficacy	.74***	.42**	.51***	.43***												
6. General Self-Efficacy	-.16	-.14	.30*	.24	.13											
7. Org. Commitment (T1)	.45***	.33**	.49***	.55***	.59***	.29*										
8. Org. Commitment (T2)	.25*	.49***	.26*	.21	.34**	.24	.67***									
9. Principal Support	.65***	.40**	.60***	.36**	.71***	.16	.59***	.39**								
10. Job Satisfaction (T1)	.13	.20	.17	.14	.28*	.20	.47***	.46***	.22							
11. Job Satisfaction (T2)	.17	.52***	.16	.14	.20	.03	.43***	.70***	.17	.35**						
12. Job Stress (T1)	-.01	-.31*	-.10	.01	-.14	-.07	-.47***	-.52***	-.15	-.31*	-.42**					
13. Job Stress (T2)	.05	-.33**	-.02	-.05	-.09	-.09	-.40**	-.64***	-.07	-.20	-.64***	.73***				
14. Training Reaction	.22	.42**	-.09	-.07	.05	-.08	.12	.28*	.10	.16	.18	-.19	-.11			
15. Wellbeing (T1)	-.03	.15	.22	.14	.19	.31*	.48***	.39**	.20	.35**	.21	-.57***	-.47***	.09		
16. Wellbeing (T2)	-.06	.22	-.15	.00	-.02	.04	.14	.34**	-.07	.03	.44***	-.54***	-.73***	.03	.36**	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 6

Multiple regression analysis of change outcomes regressed on change reactions and antecedents

Variable	Organizational Commitment			Job Satisfaction			Psychological Wellbeing		
	<i>B</i>	<i>SE(B)</i>	β	<i>B</i>	<i>SE(B)</i>	β	<i>B</i>	<i>SE(B)</i>	β
Change Reactions									
Commitment to Change	.06	.02	.31**	.05	.01	.35**	-.01	.03	-.02
Coping with Change	.23	.12	.18	.11	.09	.11	-.08	.23	-.03
Job Stress	-.19	.03	-.53***	-.15	.03	-.52***	-.53	.07	-.74***
<i>R</i> ²	.52			.53			.54		
Sig.	.000			.000			.000		
Change Antecedents									
General Self-efficacy	.11	.06	.23	.01	.05	.03	.06	.13	.06
Change-specific Self-efficacy	.08	.09	.15	.05	.07	.12	.05	.20	.04
Principal Support	.05	.08	.12	.00	.07	.01	-.13	.17	-.14
Training Reaction	.15	.06	.30*	.09	.05	.23	.09	.14	.09
<i>R</i> ²	.22			.07			.02		
Sig.	.009			.389			.898		

*Note: *p<.05, **p<.01, ***p<.001*

Table 7

Multiple regression analysis of change reactions regressed on antecedent variables

Variable	Commitment to Change			Coping with Change			Job Stress		
	<i>B</i>	<i>SE(B)</i>	β	<i>B</i>	<i>SE(B)</i>	β	<i>B</i>	<i>SE(B)</i>	β
General Self-efficacy	-.50	.29	-.19	.06	.05	.18	-.14	.18	-.10
Change-specific Self-efficacy	.93	.43	.31*	.10	.06	.27	-.12	.27	-.08
Principal Support	.53	.38	.20	.04	.06	.10	.07	.24	.05
Training Reaction	1.02	.31	.35**	-.03	.05	-.08	-.23	.20	-.16
<i>R</i> ²	.39			.18			.04		
Sig.	.000			.032			.727		

*Note: *p<.05, **p<.01, ***p<.001*

Table 8a

Moderated regression results of antecedent variables moderating commitment to change and organizational commitment

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.36		.000
Commitment to Change	.09	.02	.49**			
General Self-Efficacy (GSE)	.15	.05	.32**			
Change-specific Self-Efficacy (CSE)	.00	.08	.00			
Principal Support (PS)	.01	.07	.02			
Training Reaction (TR)	.07	.06	.13			
Step 2				.40	.04	.553
Commitment x GSE	-.01	.01	-.16			
Commitment x CSE	-.02	.01	-.27			
Commitment x PS	.01	.01	.20			
Commitment x TR	-.01	.01	-.08			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8b

Moderated regression results of antecedent variables moderating coping with change and organizational commitment

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.22		.019
Coping with Change	.07	.18	.05			
General Self-Efficacy (GSE)	.10	.06	.22			
Change-specific Self-Efficacy (CSE)	.07	.09	.14			
Principal Support (PS)	.05	.08	.11			
Training Reaction (TR)	.16	.06	.30*			
Step 2				.37	.15	.034
Coping x GSE	.08	.06	.22			
Coping x CSE	.30	.10	.71**			
Coping x PS	-.35	.11	-.70**			
Coping x TR	-.06	.05	-.14			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8c

Moderated regression results of antecedent variables moderating job stress and organizational commitment

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.54		.000
Job Stress	-.21	.03	-.58***			
General Self-Efficacy (GSE)	.08	.04	.17			
Change-specific Self-Efficacy (CSE)	.05	.07	.10			
Principal Support (PS)	.07	.06	.15			
Training Reaction (TR)	.11	.05	.21*			
Step 2				.58	.04	.405
Stress x GSE	.00	.01	-.03			
Stress x CSE	-.02	.02	-.16			
Stress x PS	.02	.02	.19			
Stress x TR	.02	.01	.17			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8d

Moderated regression results of antecedent variables moderating commitment to change and job satisfaction

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.40		.000
Commitment to Change	.10	.02	.73***			
General Self-Efficacy (GSE)	.06	.04	.17			
Change-specific Self-Efficacy (CSE)	-.05	.06	-.11			
Principal Support (PS)	-.05	.05	-.14			
Training Reaction (TR)	-.01	.05	-.03			
Step 2				.41	.01	.950
Commitment x GSE	.00	.01	-.05			
Commitment x CSE	.00	.01	.00			
Commitment x PS	.00	.01	.06			
Commitment x TR	.00	.01	.05			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8e

Moderated regression results of antecedent variables moderating coping with change and job satisfaction

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.07		.533
Coping with Change	.02	.15	.02			
General Self-Efficacy (GSE)	.01	.05	.03			
Change-specific Self-Efficacy (CSE)	.05	.08	.11			
Principal Support (PS)	.00	.06	.01			
Training Reaction (TR)	.09	.05	.23			
Step 2				.20	.12	.127
Coping x GSE	.05	.05	.17			
Coping x CSE	.21	.09	.64			
Coping x PS	-.20	.10	-.52			
Coping x TR	-.06	.05	-.20			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8f

Moderated regression results of antecedent variables moderating job stress and job satisfaction

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.53		.000
Job Stress	-.19	.03	-.69***			
General Self-Efficacy (GSE)	-.01	.04	-.04			
Change-specific Self-Efficacy (CSE)	.03	.05	.06			
Principal Support (PS)	.02	.05	.05			
Training Reaction (TR)	.05	.04	.12			
Step 2				.55	.03	.566
Stress x GSE	.01	.01	.10			
Stress x CSE	-.02	.02	-.19			
Stress x PS	.01	.02	.07			
Stress x TR	.01	.01	.08			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8g

Moderated regression results of antecedent variables moderating commitment to change and psychological wellbeing

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.14		.150
Commitment to Change	.16	.06	.44			
General Self-Efficacy (GSE)	.14	.13	.15			
Change-specific Self-Efficacy (CSE)	-.10	.19	-.09			
Principal Support (PS)	-.22	.17	-.23			
Training Reaction (TR)	-.07	.15	-.07			
Step 2				.20	.06	.447
Commitment x GSE	.00	.02	-.03			
Commitment x CSE	.01	.03	.09			
Commitment x PS	.03	.03	.19			
Commitment x TR	.00	.02	.00			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8h

Moderated regression results of antecedent variables moderating coping with change and psychological wellbeing

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.02		.957
Coping with Change	.00	.41	.00			
General Self-Efficacy (GSE)	.06	.14	.06			
Change-specific Self-Efficacy (CSE)	.05	.20	.04			
Principal Support (PS)	-.13	.18	-.14			
Training Reaction (TR)	.09	.14	.09			
Step 2				.09	.07	.478
Coping x GSE	-.03	.15	-.03			
Coping x CSE	.24	.25	.28			
Coping x PS	-.46	.27	-.45			
Coping x TR	-.05	.13	-.06			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8i

Moderated regression results of antecedent variables moderating job stress and psychological wellbeing

Variable	B	SE(B)	β	R ²	R ² Δ	p
Step 1				.56		.000
Job Stress	-.54	.07	-.75***			
General Self-Efficacy (GSE)	-.01	.09	-.01			
Change-specific Self-Efficacy (CSE)	-.02	.13	-.02			
Principal Support (PS)	-.09	.12	-.10			
Training Reaction (TR)	-.03	.10	-.03			
Step 2				.62	.06	.127
Stress x GSE	.01	.02	.05			
Stress x CSE	.00	.04	.02			
Stress x PS	-.05	.05	-.20			
Stress x TR	-.03	.02	-.14			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

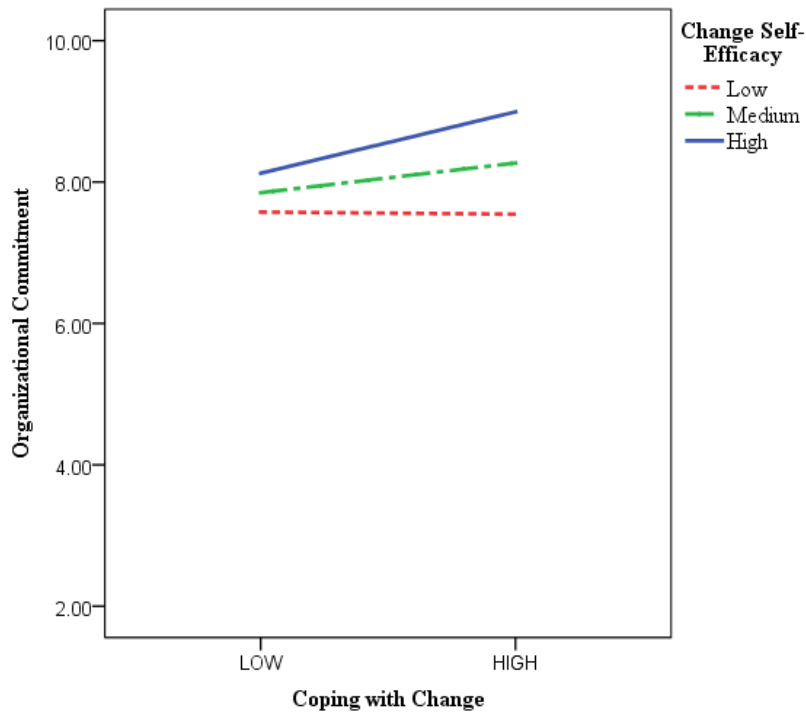


Figure 3. Moderation results of change self-efficacy on coping and organizational commitment.

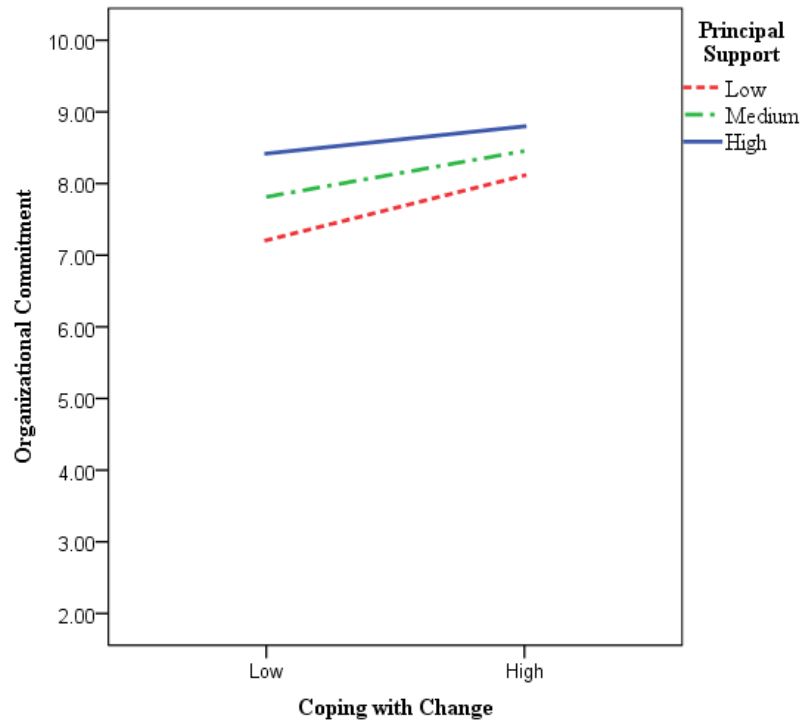


Figure 4. Moderation results of principal support on coping and organizational commitment.

Discussion

The goal of the present research was to test a model of organizational change (Oreg et al., 2011) that ties various antecedent, reaction, and outcome variables together. First, this study sought to examine whether employees' levels of commitment to change, coping with change, and job stress are related to organizational commitment, job satisfaction, and psychological wellbeing (Hypothesis 1). Second, the study assessed whether four antecedent variables (i.e. general self-efficacy, change-specific self-efficacy, principal support, and training reaction) are positively related to organizational and personal outcomes (Hypothesis 2). Third, this study tested whether the antecedent

variables also predict employee reactions (Hypothesis 3). Lastly, the current study explored whether the antecedents were significant moderators of the relationship between reactions and outcome variables (Hypothesis 4). Results of the study showed partial support for Hypotheses 1 and 3, and limited support for Hypothesis 2 and 4.

Summary of Results

Hypothesis 1 posited that positive employee reactions would be associated with positive personal and organizational outcomes, and was only partially supported. Employees who reported less job stress were more committed to the organization, more satisfied, and reported greater overall well-being. Those who were willing to commit more fully to the change process were also more committed to the organization and more satisfied. These findings make sense intuitively, as one would expect that employees who were least resistant and stressed out by change would elicit the most positive outcomes. Unexpectedly, coping abilities did not appear to have any direct relationship with the outcomes. This is different from what Judge and colleagues (1999) found in their empirical study.

In Hypothesis 2, it was speculated that the antecedent variables would be positively related to the outcomes. This hypothesis was also only partially supported as there was only a significant relationship found between training reaction and organizational commitment, where more positive training reactions led to greater commitment to the organization. Training is typically the primary mechanism through which employees learn about important changes and gain necessary skills to manage them, so when conducted properly, it should boost the employee's confidence and

commitment in the organization. The results, however, indicated that there was no direct relationship between general self-efficacy, change-specific self-efficacy, and principal support and the various outcome variables. There was also no direct relationship found between training and job satisfaction or psychological wellbeing. Some of the insignificant findings came as a surprise as the literature provides wide support for the relationship between general self-efficacy (Judge et al., 1999), change self-efficacy (Jimmieson et al., 2004; Martin et al., 2005; Wanberg & Banas, 2000), and principal support (Holt, 2003; Martin et al., 2005; Rafferty & Griffin, 2006) and positive consequences.

Hypothesis 3 proposed that the four antecedent variables would be linked to positive employee reactions. According to the results, greater change-specific self-efficacy and more positive training reactions were associated with higher levels of change commitment. This tells us that employees commit more to the change if they feel they are able to handle the change and its demands, and if they feel they are well equipped with the necessary knowledge and skills to manage it. These results provide partial support for Hypothesis 3. However, there was no relationship found between change-specific self-efficacy and training reaction and coping with change or job stress. Additionally, no direct relationship was found between general self-efficacy and principal support and the different outcomes.

Finally, results from for the fourth hypothesis discovered an interesting moderation effect of change-specific self-efficacy and principal support on the relationship between coping and organizational commitment. Those high in change self-

efficacy were more committed to the organization when they were more proactive in their coping, whereas there was no significant difference in the level of commitment in those with low change self-efficacy, despite difference in coping efforts. An explanation for this might be that those who have higher self-efficacy feel more capable and confident in the coping strategies and view the change as a positive challenge from the organization, which in turn increases their commitment to the organization. Those with low self-efficacy, on the other hand, do not believe they can handle the change and demands from the organization, so despite their coping efforts, they do not experience a shift in their level of commitment.

Principal support was another significant moderator of the relationship between coping and organizational commitment. Employees who reported having less principal support experienced a greater increase in organizational commitment when they engaged in more coping behaviors, compared to those with greater principal support. Most likely, those who receive a lot of support from their supervisors are already highly committed to the organization, so regardless of how well they are coping, it does not affect their commitment levels. Meanwhile, those with less support will need to engage in more proactive coping in order to manage the change and commit to the goals of the organization. These two findings provide partial support for Hypothesis 4. There were no significant moderation effects found for change self-efficacy and principal support on other relationships. There were also no indirect relationships found between general self-efficacy and training reactions and any of the reaction and outcome variables.

Limitations

It is important to discuss some of the limitations of this study, as they may have affected the results and diminished the observed relationship between some of variables. The first major limitation of this study was the small sample size. The study was of longitudinal design and I needed participants to complete both the Time 1 (pretest) and Time 2 (posttest) surveys. The attrition and incomplete rate were very high between the two surveys, leading to a smaller sample size. The less-than-ideal sample size may have weakened the strength of some of the relationships and made it difficult to detect significant effects.

Another methodological factor that may have contributed to the small sample size is the fact that the study was conducted through online surveys and email addresses were used as a unique identifier to link the two surveys. This meant that the survey was primarily only accessible to those who have access to a computer and a company email address. This may have affected the response rate and skewed the demographic of valid cases, as warehouse workers at the organization setting did not have email accounts or personal computers. Discrepancies in participant demographics can be seen in Table 2g, which shows that only one person (out of 63) from the warehouse location (South Bend, IN) was included in the analysis. Because of this, the study is missing responses from a sizeable population of the organization that is also enduring the change, who may have very different experiences from the corporate and branch office workers.

Additionally, the timing of the two surveys may be another confounding factor that should also be considered. The Time 1 survey was meant to serve as a baseline

measure and was conducted approximately eight weeks before the change. Given that the participants have known about the change for over a year, the timing of this survey was probably too late in the timeline. At this time, employees may have already started feeling anxious about the change or experiencing disruptions because of the change, and this might have affected their ratings on some of the variables. To truly set a baseline, the Time 1 survey should be conducted much earlier to ensure their work or experiences have not been affected yet. The Time 2 survey was conducted approximately seven weeks after the new technology implementation. This amount of time may not have been adequate enough to allow the employees to adjust and cope with the change. In effect, this could have affected their ratings on the change commitment and coping with change measure.

Future Directions

In this study, I adopted the Change Recipient Reactions to Organizational Change Model (Oreg et al., 2011) and used it as a framework for categorizing my variables (into antecedents, reactions, and outcomes). Upon further reflection of the model and its classification system, however, I started to question whether there was truly a conceptual difference between what were considered *reactions* and *outcomes*, and whether it made sense to classify commitment to change, coping, and job stress as “reactions” rather than outcome variables.

If we compare Oreg et al.’s (2011) model to the Input-Process-Output (IPO) systems model that is often used in groups and teams research (Hackman & Morris, 1975; Ilgen, Hollenbeck, Johnson, Jundt, 2005), reactions could be considered comparable to *processes*, since it is the middle level of the model, and outcomes would

be the equivalent of *outputs*. When reviewing the model under this comparison, it raises the important question: “are reactions processes or outputs”? If we simply do a model to model comparison, it could be asserted that reactions are processes, but when we evaluate individual variables that Oreg et al. (2011) would classify to be reactions, a case can be made that some of the variables are not actually processes. For example, many of the research studies discussed earlier in the literature review considered and assessed variables such as job stress and commitment to change as outcome variables (Ashford, 1988; Fedor et al., 2006; Rafferty & Griffin, 2006; Staples, 2009).

Therefore, future studies that wish to test the same or a similar model of organizational change should continue to explore the conceptual differences between *reactions* and *outcomes*, and what kind of variables fall under each respective category. Another suggestion would be to explore the relationship between antecedents, reactions, and outcome variables using a mediation model rather than a moderation model, like in this study. If we treat the Change Recipient Reactions to Organizational Change Model (Oreg et al., 2011) as a process model, then a mediation model might make more sense, since mediation affects the process of how one variable relates to another. In using a mediation model, future studies may be able to uncover some concealed relationships that would otherwise go undetected.

Although the literature seems to suggest that general self-efficacy and change-specific self-efficacy are two key dispositional traits that are often tied to more positive organizational and personal outcomes, the present study was not able to reproduce such findings. The lack of significant support may have been due to the small sample size of

the study, but additional research is still needed in order to verify the influence of these two characteristics. Moreover, future studies should also consider exploring other individual difference variables, such as proactive personality. Proactive personality is a stable trait that describes someone who takes initiative and action to influence their environment. Proactive individuals “scan for opportunities, show initiative, take action, and persevere until they reach closure by bringing about change” (Bateman & Michael Crant, 1993). Given these descriptions, I would expect those high on proactive personality to be better able to cope with change and manage the stress.

In addition, it would be beneficial to explore more organizational and change context variables as antecedents. Since both training and principal support were found to be either directly or indirectly related to organizational commitment, it leads me to believe that some contextual variables are important determinants of major organizational and change outcomes. Contextual variables such as culture and communication may be equally as important as training and principal support. One would expect that a highly supportive and collaborative culture would lead to more positive change reactions and better outcomes. One study, in particular, found a strong association between organizational culture and attitudes toward organizational change (Zabid, Sambasivan, & Azmawani, 2004). Communication may also be another important contextual variable to consider. For example, Jimmieson and colleagues (2004) found that providing employees with change-related information helped increase psychological well-being and job satisfaction.

By investigating more contextual variables, future research can shed light on which factors are the most important to employees and which resources organizations should invest in to produce the most positive outcomes. Moreover, it may also help provide insight into some possible interventions that organizations can implement to help employees better manage change.

Conclusions

The present study attempted to add to the current literature by testing a multi-level theoretical model of organizational change. The model was designed to help paint a comprehensive picture of how various antecedents, employee reactions, and outcomes relate to each other. Results from the study revealed that job stress was closely related to all organizational and personal outcomes, and change commitment was associated with higher organizational commitment and job satisfaction. Among the antecedent variables, it was found that training reactions were positively related to change commitment and organizational commitment, and change-specific self-efficacy also predicted commitment to change. Interestingly enough, the study also found that change self-efficacy and principal support significantly moderated the relationship between coping and organizational commitment.

Although all hypotheses were partially supported, several methodological limitations were present that may have affected the results of the study. Specifically, limitations comprised the small sample size, and imperfect survey procedure and timing. In the future, I recommend researchers to carefully consider the conceptual framework of the studied model and which variables should be assessed at each level. Furthermore,

future studies should also consider exploring more individual differences and contextual variables as change antecedents.

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Appendix A

Dear Pilot Employees,

I invite you to answer a quick 10-minute [survey](#) as part of a research study conducted by our SAP OCM Intern, Nicki Nguyen. The survey results will be used solely for Nicki's Thesis project, supervised by Dr. Lisa Perez at Minnesota State University, Mankato.

The purpose of this survey is to gather information on employees' experience and reactions to the upcoming changes involving the SAP implementation. This information will help provide greater insight into how the workforce reacts and adapts to a major organizational change.

Participation is voluntary, and your responses are completely confidential. Because this is for research purposes, I encourage you to be as honest as possible.

Please complete this survey by December 18, 2015:

https://mnsu.mankatopsych.az1.qualtrics.com/SE/?SID=SV_6YcMXfObaja3i3H

Patterson is committed to the well-being of our employees and supports research in this area. Studies, like this one, help organizations, like Patterson, understand what factors contribute to better adjustment and health during times of great organizational change.

Again, this survey is for research purposes only. Nicki and I would greatly appreciate your input! If you have any questions about the survey or the research, please contact Nicki Nguyen at ngoc.nguyen@mnsu.edu.

Thank you for your continued engagement.
[insert signature/ sender name here]

MSU IRBNet ID#: 811090

Date of MSU IRB approval: 9/30/15

Appendix B

Dear Pilot Employees,

Several months ago, you were invited to take a short survey as part of a research study conducted by the SAP OCM Intern, Nicki Nguyen. I would now like to ask you to respond to a follow-up survey as part of the same study. The goal of this survey is to gather information on employees' reactions and experiences *after* the change to SAP.

The survey should only take about 5-10 minutes. Survey results will be used solely for Nicki's Thesis Project, supervised by Dr. Lisa Perez at Minnesota State University, Mankato.

Participation is voluntary, and your responses are completely confidential.

Please follow this link to complete the survey:

https://mnsu.mankatopsych.az1.qualtrics.com/SE/?SID=SV_9ExRjxVV7Ss0Cax

Because this is for research purposes, I encourage you to be as honest as possible. Patterson is committed to the well-being of our employees and supports research in this area. Studies, like this one, help organizations, like Patterson, understand what factors contribute to better adjustment and health during times of great organizational change.

Again, this survey is for research purposes only. Nicki and I would greatly appreciate your participation! If you have any questions about the survey or the research, please contact Nicki Nguyen at ngoc.nguyen@mnsu.edu.

Thank you for your continued engagement.

[insert signature/ sender name here]

MSU IRBNet ID#: 811090

Date of MSU IRB approval: 9/30/15

Appendix C

Organizational Change Reaction (Pre-SAP implementation)

You are requested to participate in research supervised by Dr. Lisa Perez at Minnesota State University, Mankato. The goal of this survey is to gather information on your experience and reactions to the upcoming changes involving the SAP implementation. This survey should only take about 10-15 minutes to complete.

The purpose of this study is to examine employees' experience, attitudes, and outcomes related to a major organizational change. This information will help provide us greater insight into how the workforce reacts and adapts to change. If you have any questions about the research, please contact the co-researcher, Nicki Nguyen, at ngoc.nguyen@mnsu.edu, or Dr. Lisa Perez at lisa.perez@mnsu.edu

Participation is voluntary. You have the option not to respond to any of the questions. You may stop taking the survey at any time by closing your web browser. Participation or nonparticipation will not impact your relationship with Minnesota State University, Mankato. If you have questions about the treatment of human participants and Minnesota State University, Mankato, contact the Institution Review Board (IRB) Administrator, Dr. Barry Ries, at 507-389-1242 or barry.ries@mnsu.edu.

Responses will be kept confidential. E-mail addresses will only be used for the purpose of matching your responses from this survey with the follow-up survey, and will be removed once surveys have been paired. However, whenever one works with online technology there is always the risk of compromising privacy, confidentiality, and/or anonymity. If you would like more information about the specific privacy and anonymity risks posed by online surveys, please contact the Minnesota State University, Mankato Information and Technology Services Help Desk (507-389-6654) and ask to speak to the Information Security Manager

The risks of participating are no more than are experienced in daily life. There are no direct benefits for participating. Society might benefit by the increased understanding of how employees' reactions to change can lead to certain outcomes, both at a personal and organizational level

Submitting the completed survey will indicate your informed consent to participate and indicate your assurance that you are at least 18 years of age.

Please print a copy of this page for your future reference.

MSU IRBNet ID# 811090

Date of MSU IRB approval: 9/30/15

What is your Job Title at Patterson?

What type of work do you do?

- Administrative
- Sales / Territory Representative / Technology Adviser / Equipment Specialist
- Customer Service Representative
- Shipping / Receiving / Expediter
- Order Filler / Checker
- Inventory Control
- Service Technician (Service/Parts/Equipment Coordinator)
- Finance/Accounting-related Functions
- Procurement
- Information Technology
- Special Markets
- Marketing
- Leadership (Manager, Director, etc.)

What is your management level?

- Non-manager
- Manager
- Director or Senior Leadership

At which site are you located?

- MN Corporate Office
- MA Corporate Office (Vet)
- Kent, WA
- South Bend, IN
- Detroit, MI
- Cincinnati, OH
- Indianapolis, IN
- Portland/Medford, OR
- Everett, WA (Vet Call Center)
- Vet Pacific Northwest (Branch)
- Vet Pacific Southwest (Branch)
- Other

Are you identified as a Super User as part of the SAP implementation?

- Yes
- No

How long have you been with the company?

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21 or more years

Please indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I believe the proposed organizational change (i.e. SAP implementation) will have a favorable effect on our operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I think about this change, I realize it is appropriate for our organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm at work I often feel tense or uptight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the capability to implement the change that is initiated into my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are a lot of aspects of my job that make me upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my respected peers embrace the proposed change to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My immediate manager is in favor of this change to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have the capability to successfully implement this new system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to tell others that I am part of this organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The change to SAP will prove to be best for our organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The change in operations will improve the performance of our organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe we can successfully implement this change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The top leaders support the change to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My immediate manager encourages me to support the change to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can implement this change in my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually under a lot of pressure when I am at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A lot of time my job makes me very frustrated or angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am a leader of transformation efforts in the transition to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When we implement the new SAP system, I will react by trying to manage the change rather than complain about it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When the change was announced, I tried to react in a problem-solving, rather than an emotional, mode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often find myself leading change efforts in this company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The change that we are implementing (i.e. SAP) is correct for our organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am capable of successfully performing my job duties with the proposed change to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually calm and at ease when I'm working	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the time when I'm at work, I don't feel that I have much to worry about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The top leaders in this organization are "walking the talk"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The majority of my respected peers are dedicated to making this change to SAP work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This job really inspires the best in me in the way of job performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which the following statements apply to you.

	Not at all true	Hardly true	Moderately true	Exactly true
I can always manage to solve difficult problems if I try hard enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If someone opposes me, I can find the means and ways to get what I want	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for me to stick to my aims and accomplish my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that I could deal efficiently with unexpected events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thanks to my resourcefulness, I know how to handle unforeseen situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can solve most problems if I invest the necessary effort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can remain calm when facing difficulties because I can rely on my coping abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am confronted with a problem, I can usually find several solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I am in trouble, I can usually think of a solution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can usually handle whatever comes my way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how often you've experienced the following.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt confident in your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt that difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

All in all, how satisfied are you with your job?

- Very Dissatisfied
- Somewhat Dissatisfied
- Neutral
- Somewhat Satisfied
- Very Satisfied

Please indicate your gender.

- Female
- Male
- I do not wish to identify

Please indicate your age.

- Under 20
- Between 20-29 years old
- Between 30-39 years old
- Between 40-49 years old
- Between 50-59 years old
- 60 or above
- I do not wish to identify

Please provide your Patterson email address. (This will only be used for pairing responses between this survey and the follow-up survey, and will be removed once paired.)

Appendix D

Organizational Change Reaction Survey (Post-SAP implementation)

Several months ago, you were invited to answer a survey as part of a research study supervised by Dr. Lisa Perez at Minnesota State University, Mankato. As a follow-up, you are now requested to respond to another short survey in order to assess your experience and reactions after the SAP implementation. This survey should only take about 5-10 minutes to complete.

The purpose of this study is to examine employees' experience, attitudes, and outcomes related to a major organizational change. This information will help provide us greater insight into how the workforce reacts and adapts to change. If you have any questions about the research, please contact the co-researcher, Nicki Nguyen, at ngoc.nguyen@mnsu.edu, or Dr. Lisa Perez at lisa.perez@mnsu.edu.

Participation is voluntary. You have the option not to respond to any of the questions. You may stop taking the survey at any time by closing your web browser. Participation or nonparticipation will not impact your relationship with Minnesota State University, Mankato. If you have questions about the treatment of human participants and Minnesota State University, Mankato, contact the IRB Administrator, Dr. Barry Ries, at 507-389-1242 or barry.ries@mnsu.edu.

Responses will be kept confidential. E-mail addresses will only be used for the purpose of matching your responses from this survey with the previous survey, and will be removed once surveys have been paired. However, whenever one works with online technology there is always the risk of compromising privacy, confidentiality, and/or anonymity. If you would like more information about the specific privacy and anonymity risks posed by online surveys, please contact the Minnesota State University, Mankato Information and Technology Services Help Desk (507-389-6654) and ask to speak to the Information Security Manager.

The risks of participating are no more than are experienced in daily life. There are no direct benefits for participating. Society might benefit by the increased understanding of how employees' reactions to change can lead to certain outcomes, both at a personal and organizational level.

Submitting the completed survey will indicate your informed consent to participate and indicate your assurance that you are at least 18 years of age.

Please print a copy of this page for your future reference.

MSU IRBNet ID# 811090

Date of MSU IRB approval: *Pending*

Please provide your Patterson email address. (This will only be used for pairing responses between this follow-up survey and the first survey, and will be removed once paired.)

What is your Job Title at Patterson?

What is your work function?

- Administrative
- Sales / Territory Representative / Technology Adviser / Equipment Specialist
- Customer Service Representative
- Service Technician (Service/Parts/Equipment Coordinator)
- Shipping / Receiving / Expediter
- Order Filler / Checker
- Inventory Control
- Finance / Accounting
- Procurement
- Information Technology
- Special Markets
- Marketing
- Leadership (Manager, Director, etc.)
- Other

What is your management level?

- Non-manager
- Manager
- Director or Senior Leadership

At which site are you located?

- MN Corporate Office
- MA Corporate Office (Vet)
- Kent, WA
- South Bend, IN
- Detroit, MI
- Cincinnati, OH
- Indianapolis, IN
- Portland/Medford, OR
- Everett, WA (Vet Call Center)
- Pacific Northwest (Vet Branch)
- Southwest (Vet Branch)
- Other

Were you identified as a Super User as part of the SAP implementation?

- Yes
- No

All in all, how satisfied are you with your job?

- Very Dissatisfied
- Somewhat Dissatisfied
- Neutral
- Somewhat Satisfied
- Very Satisfied

Please indicate the extent to which you agree or disagree to the following statements pertaining to the **SAP implementation**.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe in the value of this change (i.e. SAP implementation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The change to SAP was a good strategy for this organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that management made a mistake by introducing this change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The change to SAP serves an important purpose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Things would be better without this change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This change was not necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree to the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have been a leader of transformation efforts in the transition to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When the change was announced, I tried to react in a problem-solving, rather than an emotional, mode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually calm and at ease when I'm working	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are a lot of aspects of my job that make me upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree to the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I often find myself leading change efforts in this company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A lot of time my job makes me very frustrated or angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the time when I'm at work, I don't feel that I have much to worry about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This job really inspires the best in me in the way of job performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how often you've experienced the following statements.

	Never	Almost Never	Sometimes	Fairly	Very Often
In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt confident in your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt that difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree to the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
When we implemented the new SAP system, I reacted by trying to manage the change rather than complain about it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm at work I often feel tense or uptight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually under a lot of pressure when I am at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to tell others that I am part of this organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree or disagree to the following statements pertaining to the SAP training.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The training we received prepared me well for the transition to SAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was very satisfied with the training that was delivered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the training that was provided could have been better	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>