Evaluating Key Predictors of Employee Response to Change in the Pharmaceutical Industry

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Major organizational changes such as mergers and acquisitions are often disruptive and costly to organizations and demoralizing to employees when not executed well. Although employee responses to change have been studied in several industries, employee responses during change execution in the pharmaceutical industry have not been subject to study. The purpose of this quantitative, correlational study was to reduce the knowledge gap related to organizational change in the pharmaceutical industry by evaluating key predictors of employee response to large-scale change. The research questions focused on four key predictors (initial change reaction, change communication, involvement in change development, and perceived change success) and their effect on two primary dependent variables: reaction to change (*RC*) and support of change (*SC*). Ninety-eight participants completed the survey and multiple regression was used to measure associations between predictor variables and dependent variables. Together, the four independent variables predicted *RC* and the championing subscale of *SC*. The study contributes to positive social change by providing leadership with information for use in guiding creation of a supportive work environment during sound organizational change and to inspire employees developing medical innovations to fulfill global health needs, while creating skilled jobs and generating profit.

Key words: *Change management, pharmaceutical industry, organizational change, drug development, mergers and acquisitions, transformational leadership*

Introduction and Background

Pharmaceutical research and development (R&D) is the cornerstone of one of the most expensive and high-risk global industries, and plays a crucial role in addressing the world's present and future health needs. In the global pharmaceutical industry, only one in 10,000 discovered compounds make it to market (Cook, Hunter, & Vernon, 2009); because of this, bringing a pharmaceutical compound to market costs an average of $1.8 billion (Golec, Hegde, & Vernon, 2010). Regulatory agencies around the world, such as the United States Food and Drug Administration (FDA) and the European Medicines Agency (EMA), also heavily regulate the industry, and pharmaceutical companies must meet strict requirements before a drug is approved for marketing (Van Doren, 2011; Wechsler, 2009). These challenges create pressure on the pharmaceutical industry to find ways to operate more efficiently. A common approach in the industry is to engage in M&As as a key strategic measure that affects multiple processes, employees, and departments (Hornke, 2009; Hornke & Mandewirth, 2010).

M&As are examples of large-scale change initiatives; all organizations experiencing large-scale change initiatives must manage them well to avoid negative consequences. Deeg (2009) observed that change of this magnitude has the potential to disrupt a company's performance, success, and growth if not handled effectively and efficiently. Barcan (2010) echoed this sentiment by elaborating further on the need for an environment that is conducive to sound decision-making in the pharmaceutical industry. The expensive and high-risk nature of the pharmaceutical industry suggests that the large-scale organizational changes resulting from mergers and acquisitions have a similar potential to disrupt not only company productivity and revenue, but also employee commitment.

Although research exists on employee response to change in other areas of business and industry, no research exists that specifically identified the factors that predict employee compliance, cooperation, and

championing of change in the pharmaceutical industry. Goksoy, Ozsoy, and Vayvay (2012) and Oreg and Sverdlik (2011), for example, examined the importance of understanding employee response during change implementation, but not in pharmaceutical industry settings. Therefore, in this study, I examined whether several factors predict employee support or reaction to large-scale change initiatives, such as M&As, in the pharmaceutical industry. The specific factors that I investigated were the following:

- change communication,
- initial change reaction,
- involvement in change development, and
- perceived change success.

Employee support was measured in terms of compliance, cooperation, and championing.

Knowledge of these factors is crucial for developing effective change management strategies that minimize the potential disruptive effects on employees and business operations. Effective change management is extremely important in the area of pharmaceutical R&D because of the high stakes involved (Cook et al., 2009). This study was designed to address the gap in scholarly research on change management in the pharmaceutical industry. The results of this study have practical implications for guiding the creation of a supportive work environment during organizational change—a transitional environment in which employees are motivated and engaged in their jobs to meet health and medical needs globally, while the companies create skilled jobs and generate profit.

Problem Statement

Multiple researchers have sought to understand employee engagement and response during large-scale change initiatives in nonpharmaceutical industries (Goksoy et al., 2012; Herscovitch & Meyer, 2002; Lau & Woodman, 1995; Oreg & Sverdlik, 2011). According to Budhwar, Varma, Katou, and Narayan (2009), 50–80% of M&As fail because of clashing corporate cultures, a lack of clear communication, and a lack of employee involvement in the change. However, employee response to change in the pharmaceutical industry remains understudied and underrepresented. Therefore, the problem addressed by this study was a lack of scholarly research and understanding of the factors that predict employee response to large-scale organizational change such as M&As in the pharmaceutical industry.

Purpose of the Study

The purpose of this quantitative, correlational study was to narrow the knowledge gap on large-scale organizational change in the pharmaceutical industry by evaluating key predictors of employee response to large-scale change. The two primary dependent or predictor variables in this research were reaction to change (*RC*), which includes the full spectrum of reactions ranging from active resistance to championing change; and support of change (*SC*), which was also expressed as three separate measures: compliance (*CM)*, cooperation (*CP*), and championing (*CH*). The four independent variables were initial change reaction (*ICR)*, change communication (*CHC)*, involvement in change development (*ICD)*, and perceived change success (PCS). The two primary research questions and their respective hypotheses were the following:

1. What is the relationship between *RC* and the predictor variables *ICR*, *ICD*, *PCS*, and *CHC*?

   $H_0$1: No relationship exists between *RC* and the predictor variables *ICR*, *ICD*, *PCS*, and *CHC*.

   H_a1: A relationship exists between *RC* and the predictor variables *ICR*, *ICD*, *PCS*, and *CHC*.

2. What is the relationship between *SC* and the predictor variables *ICR*, *ICD*, *PCS*, and *CHC*?

   $H_0$2: No relationship exists between *SC* and the predictor variables *ICR*, *ICD*, *PCS*, and *CHC*.

H_a2: A relationship exists between SC and the predictor variables ICR, ICD, PCS, and CHC.

Key Definitions and Operationalization of Constructs

Reaction to change (*RC*)

The way in which an employee reacts to large-scale organizational change fell on a continuum ranging from a negative reaction of active resistance to a positive reaction of championing change, represented by a 9-point Likert scale. Each participant selected one of nine responses from the BSCS instrument that lie on the continuum on Question 10 of the survey, as represented in Figure ***1***. The continuum of possible responses on the reaction to change continuum. I converted this continuum to an index ranging from 0-100, for the sake of consistency among the dependent variables, as follows:

$RC = 12.5\ (L) - 12.5$ where L = the raw Likert scale response.

Thus, I converted a response of 1 to 0, and a response of 9 to 100.

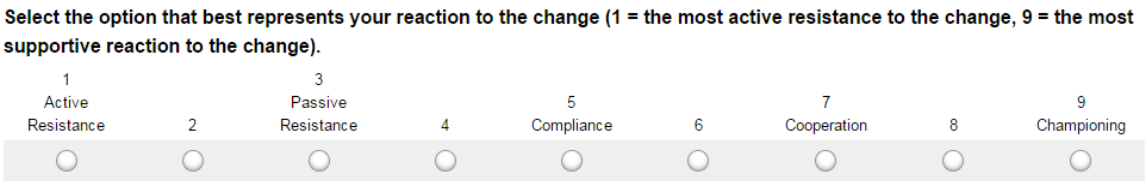

Figure 1. The continuum of possible responses on the reaction to change continuum.

Support of change (SC)

The manner in which an employee supports large-scale organizational change involves three levels of support: *compliance* (*CM,* 3 survey questions), *cooperation* (*CP,* 8 survey questions), and *championing* (*CH,* 6 survey questions). Much like *RC*, these represent a spectrum of increasing support of a change initiative. Participants answered the items associated with each category on a 7-point Likert-type scale from the BSCS instrument. I calculated subscales of support as the mean of responses to the corresponding survey questions, and each of these subscales represented a dependent variable for one test of Hypothesis 2, with the intention of capturing detail on each specific facet of support. The instrument's developers, Herscovitch and Meyer (2002), support this scoring scheme, where the specific subscales should be measured. Herscovitch and Meyer also indicated that the overall score, taken as the average of all three subscales, is representative of the degree to which a respondent supported the change overall. Higher scores indicate a greater degree of support of change. A composite index for *SC* was also a dependent variable, with higher values indicating greater support of change. *SC* was simply the average of the converted values for the three subscales, *CM, CP, and CH*, as follows:

$SC = (CM + CP + CH) \div 3$.

Compliance (CM). This construct of support measured the extent to which employees accepted a change. This involves how much employees agree to accept role changes and adjust their workplace habits to comply with those changes. I measured this variable as the mean of Survey Questions 11–13 on the measures of behavioral support for change portion of the survey, where higher scores corresponded to greater compliance with change. I converted the mean response to a subscale for compliance (*CM*) that ranged from 41 to 60, as follows:

$CM = 3.167\ (L_{CM}) + 37.833$ where L_{CM} = the mean Likert response for compliance.

Cooperation (CP): This construct of support measured the extent to which employees assisted in changing the company. This construct defined how well employees engaged in change-related behaviors, avoided former practices, and tolerated temporary disruptions caused by the change. I measured this variable as the mean of Survey Questions 14–21 on the measures of behavioral support for change portion of the

survey, where higher scores corresponded to greater cooperation with change. I converted the mean response to a subscale for cooperation (*CP*) that ranges from 61 to 80, as follows:

$CP = 3.167 (L_{CP}) + 57.833$ where L_{CP} = the mean Likert response for cooperation.

Championing (CH): This construct of support measured the extent to which employees encouraged others to cooperate with and accept the change. This construct gauged how actively employees spoke positively about the change, overcame resistance to the change, and persevered with the change in order to reach goals. I measured this variable as the mean of Survey Questions 22–27 on the measures of behavioral support for change portion of the survey, where higher scores corresponded to greater championing of the change. I converted the mean response to a subscale for championing (*CH*) that ranged from 81 to 100, as follows:

$CH = 3.167 (L_{CH}) + 77.833$ where L_{CH} = the mean Likert response for championing.

Initial change reaction (ICR)

This item asked participants to rank their response to first learning about the organizational change as either positive or negative. The range of initial reactions ran from "I am going to lose my job" = 1 to "I may get promoted" = 7. Thus, lower scores on this variable corresponded with a negative opinion of the change, while higher scores corresponded with a positive opinion of the change. I used a single survey question to assess this independent variable.

Involvement in change design (ICD)

Involvement in change design refers to the degree to which an employee takes part in the planning and implementation of change. The range of involvement ran from "not involved" = 1 to "very involved" = 7. Employees may be heavily involved in change design to the degree that they willingly cooperate, or even champion the proposed change. Alternatively, employees may be minimally involved or not involved at all. As such, a higher degree of involvement corresponded with higher scores.

Perceived change success (PCS)

Perceived change success refers to the degree to which employees perceived the proposed change to be completely and effectively implemented. Employees chose on a scale from "a complete failure" = 1 to "a resounding success" = 7. As such, higher scores indicated perceptions of an increased amount of success.

Change communication (CHC)

Change communication refers to the manner in which management conveys information relevant to the proposed change to employees, as well as the frequency. Change communication involves the clarity and quality of communication, where "Very bad" = 1, and "Very good" = 7. Frequency described how often the change was communicated to employees, and ranged from "Rarely" = 1, to "Very often" = 7. I calculated the change communication score as the average of these two measures. Thus, this variable ranged from 1 to 7, where higher scores corresponded with a frequent, high quality level of communication about the change.

Assumptions and Limitations

I assumed that all of the participants involved in this survey had a clear understanding of and appreciation for the purpose of this study and provided honest, forthright answers. I supported this assumption by assuring participants of the strict confidentiality and anonymity of the data and information gathered. I also assumed that the methodology for this study was reliable and valid, and that the methods of data collection and analysis were the best options for this study. This is based on Mitchell and Jolley's (2001) discussion of research methods and the appropriateness of the quantitative design I employed to answer the research questions.

The study could have been limited by the time allocations and cost of resources required for the study. The study could also have been limited by the level of efficiency in collecting and analyzing data; it could have been limited by the level of validity and reliability in analyzing and reporting data, as well. Participants' willingness to disclose information about their perceptions of change and their work environment could have also limited the study. In addition, several limitations are inherent within the scope of any quantitative study. Foremost, I used a quantitative method to address the research questions and hypotheses, but was not able to examine adequately the depth and underlying detail of some responses. For example, I did not examine those responses related to the perceptions of all aspects of the change's implementation as they affect a participant's support of the change, and how participants viewed their experience of the change or what could have been done better. Thus, this study reflects a trade of a degree of richness within the results for a degree of statistical certainty that associations did not occur by chance alone, and an ability to examine the numerical change in these associations, in accordance with Mitchell and Jolley's (2001) guidelines.

Literature Review

Employee Involvement in and Support of Change

Based on areview and synthesis of the literature, it appears that inclusion of employees in organizational change implementation increases their support of change (Barratt-Pugh, Bahn, and Gakere, 2013; Budhwar et al., 2009; Franckeiss, 2012; Goksoy et al., 2012; Marks & Mirvis, 2011; Shibayama et al., 2011; Whelan-Berry & Sommerville, 2010). Viewing employees as stakeholders concerned with an organization's overall success may help establish a bottoms-up approach to including employees in the change process (Duckworth, 2014; Greenwood & Buren III, 2010). In addition, researchers found that employees can have a nuanced reaction to change, that they do not always outright support or resist change (Mishra & Bhatnagar, 2010; Oreg & Sverdlik, 2011). Employees can both resist and support aspects of the same change, and their personal attitudes toward change interacts with their attitudes toward the change agent, which can result in ambivalence (Mishra & Bhatnagar, 2010; Oreg & Sverdlik, 2011). Such findings encourage researchers to more accurately measure employees' response to change (Oreg & Sverdlik, 2011).

Change Communication and Transformational Leadership

Additionally, effective change management also includes clear communication of change before and during implementation, as well as employee and organizational change histories as other key factors in successful organizational change (Budhwar et al., 2009; Goksoy et al., 2012; Whelan-Berry & Sommerville, 2010). As Barratt-Pugh et al. (2013), Budhwar et al. (2009), and Marks and Mirvis (2011) demonstrated, the role human resources departments and change managers play in successful change and how they can facilitate the blending of organizational cultures is key. In addition, transformational leadership, an inclusive leadership style that includes the concerns and views of subordinates, has proven effective in organizational change because it can include employees in the planning and implementation of change (Charbonnier-Voirin, El Akremi, & Vandenberghe, 2010; Ricke-Kiely & Robey-Williams, 2011; Wang& Rode, 2010). Although these studies focused on organizational change and some specifically on employee response to change, the settings were not in the pharmaceutical industry.

Drivers of Change in the Pharmaceutical Industry

M&As are common in the pharmaceutical industry. Hornke (2010) and Hornke and Mandewirth (2010) noted that M&As have become a global phenomenon and business strategy pharmaceutical companies increasingly use to gain and sustain a competitive advantage. According to Shibayama, Kunihiro, and Kimura(2011), M&As are one of the main drivers of change in the pharmaceutical industry and are evolving as an essential strategic measure. In an industry where heavy investment of time and money is required to bring a promising drug from the laboratories to market, pharmaceutical companies engage in

various business practices to reduce competition (Granier & Trinquard, 2010). According to Granier and Trinquard, established pharmaceutical companies often address competitive threat by merging with new entrants to the industry. According to Budhwar et al., 50-80% of M&As fail because of clashing corporate cultures, a lack of clear communication, and a lack of employee involvement in change.

Pharmaceutical regulations change constantly and the industry must respond. According to Whelan-Berry and Sommerville (2010), these regulations are major drivers of change in the pharmaceutical industry and include research and development (R&D) guidance to industry and the regulation and marketing of new and existing products. Changes in drug regulations can affect R&D and marketing decisions, as well as organizational responses leading to change, such as M&As, and offering new lines of products (Cook et al., 2009). In addition, considering the enormous amount of time and money required to bring new drugs to market, pharmaceutical companies must sometimes act on predicted and forecasted product trends, regulations, and market effects, according to Cook et al (2009). This balanced approach is a way to mitigate the risk of regulation change while remaining competitive.

The pharmaceutical industry is also sensitive to new laws and can undergo major change as a result. Golec et al. (2009) addressed how government regulations, even anticipated ones, could dramatically affect R&D activity in the pharmaceutical industry. In this article, Golec et al. reviewed the effect of President Clinton's announcement of pharmaceutical price controls through the Health Securities Act (HSA) on stock prices of select pharmaceutical firms. Although the act did not actually pass, significant reductions in R&D investment and corresponding reductions in stock prices occurred. For example, while new drug applications (NDAs) remained steady following the announcement of HSA in 1992, the number of new investigational drug applications (INDs) fell sharply and leveled off before rising again in 1995, following the rejection of HSA. This meant that pharmaceutical companies were afraid to invest in R&D related to innovations.

Gap in the Literature

The major shortcoming is that research on employee support of change in the pharmaceutical industry is virtually nonexistent. Given the high stakes nature of the pharmaceutical industry (Golec et al., 2010) and the pervasiveness of change in the industry (Bordia, Restubog, Jimmieson, & Irmer, 2011), such work is clearly needed. In this study, I sought to contribute to needed research on employee response to change in the pharmaceutical industry. Because employee response to change in other areas of study involves behavioral and attitudinal components (Jaros, 2010), as well as emotional ones (Mishra & Bhatnagar, 2010), including feelings of ambivalence (Oreg & Sverdlik, 2011), I approached employee involvement in change in the pharmaceutical industry as a multidimensional construct, similar to Herscovitch and Meyer's (2002) approach. Compliance, cooperation, and championing should encompass the range of employee support from minimal support of change to enthusiastic promotion of change, with active and passive resistance completing the full spectrum of employee reaction to change. With this study, I offer a starting point for future research on employee response to large-scale organizational change in the pharmaceutical industr**y.**

Methodology

Research Design

The purpose of this study was to reduce the knowledge gap in scholarly research on large-scale organizational change in the pharmaceutical industry by evaluating key predictors of employee response to large-scale change. I used a quantitative, correlational design in this study. This was the most appropriate method because the aim of the research was to examine statistically the effects of quantifiable concepts (Howell, 2012). The focus of this research was to investigate the effects of *ICR*, *PCS, ICD*, and *CHC* on *RC,SC*, and the subscales of *SC*. Each of these variables was measureable through

numerical responses to a survey instrument. I therefore utilized a research design that allowed for an objective view of the variables of interest, and which permitted a relatively higher level of certainty while forfeiting the richness of detail associated with qualitative research (Bansal & Corley, 2011).

Qualitative research has no standard measures, and instead relies on the researcher's interpretations (Bansal & Corley, 2011). This would have been an appropriate research method if, for example, I was interested in an in-depth exploration of the participants' emotional responses to M&As in the pharmaceutical industry. Thus, I rejected the qualitative methodology. By contrast, the mixed methods approach requires a comprehensive data collection process (Crosbie & Ottmann, 2013; Heyvaert, Maes, & Onghena, 2013). This would have required a pilot study followed by the main study, and would have involved both quantitative and qualitative methods. Since the focus was on determining key predictors, without the need for rich, qualitative details, the quantitative method fully satisfied the objectives of this research. Therefore, I rejected the mixed method approach as well and utilized a quantitative design.

Sampling and Sampling Procedures

To gather sample participants from the population, I contacted pharmaceutical industry employees who recently experienced a large-scale change using SurveyMonkey's sample selection service. A collector at SurveyMonkey contacted employees from qualifying companies who had already provided consent to be contacted for surveying, and requested their participation in the study. I instructed SurveyMonkey to collect participants based on the following criteria:

- Participants must have been either employees at pharmaceutical companies, including CROs and biotechnology companies, or organizational change experts within the pharmaceutical industry.
- Participants must have had experience with the pharmaceutical industry, though varying amounts of experience are acceptable.
- Participants must have experienced some large-scale change in their company. I provided participants with an informed consent statement on the front page of the survey, requiring consent to participate in the study before continuing.

The sampling method used was stratified sampling, because I gathered a purposive, targeted sample representing a diverse mix of industry experience and inclusion of at least one change expert, as recommended by Howell (2012). This approach led to a sample of participants who had previous experience with large-scale change and a sample that was approximately proportionally representative of the employee mix at a pharmaceutical company. Through SurveyMonkey's participant pool, I ensured targeting of a diverse sample representing various levels of experience and job categories, including change management experts.

Instrumentation

For participants who agreed to participate in the study and provided informed consent, SurveyMonkey provided a link to the survey. Through the online survey, I administered the BSCS (Herscovitch & Meyer, 2002) supplemented with industry-specific questions, as well as a few questions to better understand the characteristics of the population. I labeled participants using a confidential identifier so that their data may be identified if they later chose to opt out of the study. I stored data on the survey host server until it was time to download and store it on a thumb drive for access and analysis. I did not follow up with participants in any way.

Data Collection, Field Test and Sample Characteristics

I collected data over a 2-week time frame in July 2015. I used the first 11 completed responses as a field test to assess the quality of the responses and to determine whether the right participants were

responding to the survey. A few respondents listed job roles, such as cashier, that did not appear consistent with those in the pharmaceutical industry. Three respondents selected other and wrote not applicable as their pharmaceutical industry job category. Based on these initial responses, I decided to add a screening question that specifically asked participants if they work in the pharmaceutical industry. Those who answered no were disqualified, and those who answered yes were allowed to complete the survey. These first 11 completed surveys were therefore not included in the final analysis, as it was hard to determine with certainty that the respondents worked in the pharmaceutical industry.

A total of 914 people attempted to access the online survey. Of these, 816 either did not fit the inclusion criteria or did not consent to the survey and were removed from the dataset. I then assessed the data for nonrandom missing cases and did not find any. I further checked for univariate outliers by examination of standardized values, which indicate the distance a participant's score falls from the mean, and is measured in standard deviations. I considered any cases 3.29 standard deviations away from the mean as outliers to be removed (Tabachnick & Fidell, 2012). As I did not find any outliers in the data, the final dataset contained a total of 98 participants.

Of the 98 participants in the final data set, 45% were male (n = 44) and 55% were female (n = 54). Many were between 30 and 44 years of age (42, 43%) and reported household earnings between $50,000 and $74,999 per year (15, 15%). The largest proportion of participants came from the mid-Atlantic region of the United States (20, 20%). Of the pharmaceutical industry job category options, the largest group of participants was researchers (18, 18%). Many of the participants' highest level of education was a Bachelor's degree (38, 39%). A large portion of the participants' companies underwent a merger or acquisition as a large-scale organizational change (35, 36%). This mix of participants approximately represents the employee mix at a typical pharmaceutical company. The frequencies and percentages of the key sample characteristics are presented in Table 1.

Table 1
Frequencies and Percentages of Sample Characteristics

Sample Characteristic	*n*	%
Select the pharmaceutical industry category that best describes your job role?		
Executive (e.g., Vice President)	7	7
Management (e.g., Manager, Director)	17	17
Professional (e.g. Project management, Marketing)	10	10
Support (e.g., Information technology)	12	12
Research (e.g., Scientist)	18	18
Change Management Professional (e.g., Six Sigma Expert)	1	1
Other	33	34
What is the highest level of education you have completed?		
High school or equivalent	24	25
Bachelor's Degree	38	39
Master's Degree	17	17
Doctorate or other advanced degree (e.g., PhD, MD, PharmD)	19	19
What best describes the large-scale organizational change you experienced?		
Merger or acquisition	35	36
Major process redesign	17	17
Restructuring	22	22
Downsizing	12	12

Upsizing	7	7
Other large-scale change	5	5

Note. Due to rounding errors, not all percentages may sum to 100.

Data Analysis

I screened the data for accuracy, missing data, and outliers. I calculated descriptive statistics and frequency distributions to determine that responses were within a possible range of values, and that outliers did not distort data. I tested for the presence of outliers by calculating *standardized values*. Standardized values represent the number of standard deviations an individual score falls from the mean of those scores. According to Tabachnick and Fidell (2012), participants with scores more than 3.29 standard deviations from the mean are considered outliers, and as a result, that participant's survey should be removed from the data set. Additionally, I examined cases with missing data for non-random patterns and excluded participants with large portions of non-random missing data from the sample.

After screening the data, I conducted the necessary analyses to test the hypotheses and to inform the research questions of interest. I conducted one regression analysis to address Research Question and Hypothesis 1 and four regression analyses for Research Question and Hypothesis 2.

Multiple regression is an appropriate analysis when the goal is to assess the extent of a relationship among a set of dichotomous or interval and ratio predictor variables on an interval and ratio criterion variable. I used the following regression equation (main effects model):

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$$

where $\hat{Y}$ = the predicted value for the response variable, β_0 = constant, β_1 = first regression coefficient, β_2 = second regression coefficient, β_k = k^{th} regression coefficient, and X_i = predictor variables (Tabachnick & Fidell, 2012). I did not assess any interaction terms because the goal was not to determine moderating effects of any of the research variables.

Reliability

I conducted Cronbach's alpha tests of reliability and internal consistency on scales, with one test per scale. The Cronbach's alpha provides mean correlation between each pair of items and the number of items in a scale (Brace, Kemp, & Snelgar, 2006). I interpreted the alpha values using George and Mallery's (2010) guidelines where $\alpha > .9$ is excellent, >.8 is good, >.7 is acceptable, >.6 is questionable, >.5 is poor, and < .5 is unacceptable. Results for SC indicated excellent reliability ($\alpha = .93$).

Findings

For Research Question 1, the results suggest that an aggregate model of ICR, CHC, ICD, and PCS predicts RC ($F(4,93) = 5.50$, $p = .001$, $R2 = 0.19$). However, the multiple linear regression did not find a significant individual predictor. Of the four independent variables, *ICR* was the only one that trended towards predicting *RC*, but the association was not significant.

For Research Question 2, the results suggest that there is insufficient evidence to conclude that ICR, CHC, ICD, and PCS predict SC ($F(4,93) = 1.18$, $p = .326$, $R2 = 0.05$). However, ICR, CHC, ICD, and PCS, in the aggregate, were found to predict the CH subscale of SC ($F(4,93) = 5.24$, $p = .001$, $R2 = 0.18$). As in the regression used to predict RC, the model could not identify an individual independent variable with significant predictive ability.*PCS* was the closest variable to being a significant predictor of *CH*, though this association was not significant.

Implications

Organizational Change Implications

Of the 98 participants in the study, only 3.1% described themselves as having actively resisted change, and only another 11.2% passively resisted change (See Figure 2). Although it is possible that respondents to this type of survey were those more likely to support change, organizations should be encouraged by the low percentage of employees who resist change. This finding creates an opportunity for organizations to leverage the fact that the vast majority of employees support organizational change. What is interesting, however, is that of those who supported change, a majority simply comply, providing minimal support. Organizations can create a more targeted approach to change management that incorporates the findings from this study. Such approach could identify and help convert some employees passively resisting change and move the compliant employees up the reaction to change continuum, making them more supportive of change.

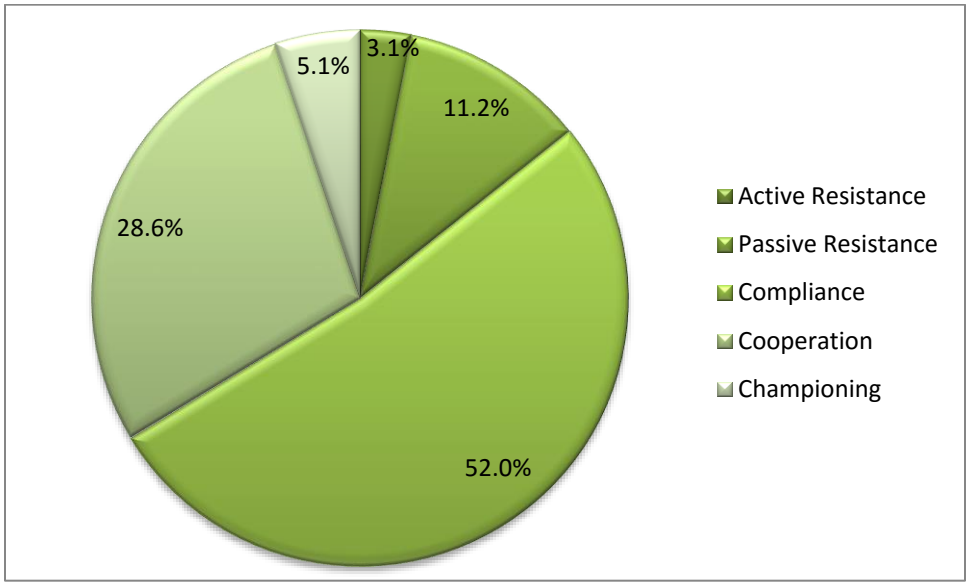

Figure 2. The distribution of responses to reaction to change.

The results imply that a combination of factors, such as initial change reaction, involvement in change design, perceived change success, and change communication, can facilitate a better reaction to change. Large-scale changes, such as M&As, are strategic events with several proprietary and confidential elements. This poses a communication challenge to senior management, who may not be authorized to share many aspects of the change freely. This reality makes it difficult to incorporate the findings of this study in the design and implementation of organizational change, as communication and employee involvement are vital to the way employees react to organizational change. Therefore, managers contemplating change need to consider and decide from the outset what information to share with employees, communication frequency, and how much to engage employees in the process. This practice may be different from the traditional approach of focusing on the financial and regulatory aspects of the deal first, then worrying about change implementation and employee reaction later.

Positive Social Change Implications

Pharmaceutical industry employees are very much interested in creating social change. The intent of their research and development efforts is frequently to discover and develop medicines that fulfill unmet medical needs and improve the quality of life of individuals in societies around the world. In many cases, the medicines and other scientific innovations are life-saving, which is the ultimate testament of the potential positive impact of their work on social change. Given the magnitude of the opportunity for social

change in this profession, it is important for socially responsible organizations to create an environment in which such employees can have their greatest impact. Such environment can lead to better performance and focus during organizational change, effectively enabling employees to fulfill their mission of improving lives through their work developing medical innovations.

With this new knowledge of the key factors that predict employee reaction to change, the industry is positioned to implement sound change management practices during organizational change. To improve the probability of a more positive change reaction, all four independent variables must be considered before, during and after implementing large-scale change, as individually they do not influence reaction to change. Although the association was only directional and not significant, based on the multiple regression analysis, change leaders should pay particular attention to the mode and content of the initial change communication, as it could influence whether employees support or resist organizational change.

Recommendations for Practice

In announcing organizational change initiatives, especially those as large as an M&A, organizations must be careful in communicating the right type and amount of information. Although all affected parties can benefit from a general overview of the change, each stakeholder or category of stakeholders will need more information on specific aspects of the change they deem more relevant to them. As such, the organization should create a change communication plan that addresses this need. Table 14 is an example of the diversity in information needs related to a contemplated change.

Table 14
Stakeholder Information Needs

Stakeholder	Type	Information Need
Managers	Primary	Intended business benefits and resources needed
Employees who execute the process	Primary	Reason for change in process and detailed procedures
Process management head or change management professional	Primary	Realization metrics and scope of change
Other functional areas	Secondary	Awareness of process change
External clients	Secondary	Awareness of process change components that affect interactions with them

A well-coordinated process that considers a variety of change dimensions is needed for successful change implementation. Such a process might consist of an approach that does not single out any one factor, but employs a combination of four factors (initial change reaction, involvement in change design, perceived change success, and change communication) that can assist in creating an environment of successful organizational change in pharmaceutical organizations. A well-coordinated process might also ensure that key players are aware of the decisions and the role they need to play to support it. Watson (2005) described this process as policy deployment, the second of a four-step approach to organizational strategy. The other steps are policy setting, implementation, and review. Watson's description is similar to sigma methodology, except that Watson begins with an identified solution and focuses on achieving the intended goals of that solution.

In addition to communication and employee involvement, good process management is essential to successful change implementation. In a large-scale organizational change situation, such as an M&A, the

organizations should consider using various process management tools to foster communication up, down, and across the organization. First, the organizations should establish a process realization office. This office would be responsible for coordinating all formal integration-related communication, including town hall meetings to present high-level integration strategies. This central office could serve as a trusted source of merger- or integration-related information, create consistency in messaging, and represent a communication brand for the change initiative. With such an organized process, employees would know where to go for reliable organizational change information.

Second, it is useful to establish a network of change agents to solicit feedback from peers in informal settings. According to Barratt-Pugh et al. (2013), in a study of the merger of two state government departments in Western Australia, employees had a positive experience with change when change agents used informal, relational techniques. With the feedback from the informal interactions, change leaders can adjust aspects of the implementation plan to meet stakeholder needs more effectively. This network of change agents will address a critical need to acknowledge and respond to stakeholder concerns during change implementation. Incorporating feedback through this communication vehicle even after the major change decisions have been made can be a useful way to gain additional support for the change.

As noted in the sample characteristics, one participant was a change management expert with six sigma expertise. A close examination of the responses from this participant revealed that the participant responded very positively to the questions related to the championing subscale of support of change. The participant was actively involved in the change process, perceived the quality and frequency of change-related communication highly favorably, and scored perceived change success very highly. The responses also indicate that the participant maintained an optimistic perspective of the change and influenced others to support the change. This participant essentially modeled the behaviors implied in my recommended actions to improve the probability of successful organizational change in the pharmaceutical industry.

These recommendations, if executed well, may foster a positive or supportive reaction to change. They address aspects of the four independent variables, which the study demonstrated influences reaction to change and the championing subscale of support of change when considered in the aggregate. The communication plan ensures the frequency and quality of communication, which can in turn elicit a positive initial reaction if handled well. Leveraging a network of change agents to interact with employees at all levels of the organization is a good way to keep employees involved. Doing so gives employees a voice and a feeling that their opinions and concerns matter, which could give them an overall feeling that the change may be successful.

Conclusion

The purpose of this quantitative, correlational study was to narrow the knowledge gap on large-scale organizational change in the pharmaceutical industry. This was an important study because the pharmaceutical industry frequently engages in M&As, a type of large-scale organizational change, 50-80% of which fail because of poor communication, lack of employee involvement, and clashing corporate cultures, according Budhwar et al. (2009). Researchers have studied employee response to organizational change in many industries, including law enforcement (Ford et al., 2003) the hospitality industry (Hartline& Ferrell, 1996), and the electronics industry (Goksoy et al., 2012). However, they have not focused on employee response to change in the pharmaceutical industry, even though Cook et al. (2009) and Golec et al., (2009) indicated that it is one of the most expensive and high-risk industries. It is also an industry with strong potential for positive social change impact due to the nature of the work discovering and developing medical innovations to save and improve lives, while fulfilling global health needs.

The results indicate that deploying a change management strategy that considers a combination of four factors, which were the independent variables in this study, can foster a positive, supportive employee

reaction to change in the pharmaceutical industry. These four factors were initial change reaction, involvement in change design, perceived change success, and change communication. These individual factors on their own may not result in a positive response to change, as individually, they were not significant in any of the regression analyses. To maximize the value of this key finding when contemplating organizational change, managers should create a targeted change management strategy that, at a minimum, includes a contingent of change agents to facilitate informal employee engagement, a stakeholder information needs analysis for timely and relevant dissemination of information, and a process realization office responsible for communication quality, frequency, and consistency.

Although the results of this study confirm that change is best examined as a multidimensional construct, the factors of the construct might be particular to the organizational needs and change dynamics of the pharmaceutical industry. As such, the study offers researchers encouragement and direction to identify additional factors, specific to the pharmaceutical industry, which may predict employee response to change. It also creates an opportunity to develop a better understanding of the connection between employee support of change and the enthusiasm employees feel for change as stakeholders. Finally, the findings that only a small percent of employees resist change and majority of those who support change merely comply, is an opportunity for managers to create enthusiasm and build support for change, starting with the initial change communication. Doing so might convert some of the few that may otherwise resist change and move up the change reaction spectrum those who only comply or cooperate.

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