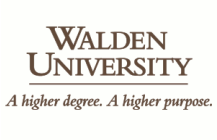

2017

Factors Contributing to Business Process Reengineering Implementation Success

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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2017

Abstract

Factors Contributing to Business Process Reengineering Implementation Success

by

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MBA, Walden University, 2006

BA, Westfield State College, 2000

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

March 2017

Abstract

Organizational leaders continue to use business process reengineering (BPR) as a process improvement methodology even though BPR implementations have had low success rates. To increase BPR success rates, organizational leaders must understand what specific factors contribute to successful BPR implementations. Grounded in Lewin's field theory, the purpose of this nonexperimental, cross-sectional study was to examine the impact of gender and education on BPR. Data collection consisted of nonprobability convenience sample of 122 members from the professional networking website LinkedIn and the professional organizational website American Society for Quality. Data were gathered from a 6-point Likert-type scale survey instrument based on Hammer and Stanton's pre-identified BPR failure factors. The MANOVA results indicated no significant gender, education, or gender and education interaction effect on a linear combination of perception of BPR success factors, F (33.00, 318.00) = .591, $p > 0.05$, partial eta squared =.058. The results of this study might contribute to social change by helping organizational leaders understand factors that do not appear to be related to successful BPR implementations. The elimination of these factors could allow organizational leaders to focus on other factors for successful BPR implementations. Successful BPR implementations might lead to increased organizational profits, which could allow organizational leaders more opportunity and increase corporate social responsibility, all of which may directly affect the quality of life in a community.

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Section 1: Foundation of the Study

Business process reengineering (BPR) is one of several quality assurance methodologies that organizational leadership might employ for the betterment of the organization. Although BPR is a recognized quality assurance methodology, critics have advised that its failure rate ranges between 50% and 80% (Darmani & Hanafizadeh, 2013; Guimaraes & Paranjape, 2013). Despite this high failure rate, organizational leaders still employ BPR efforts.

Background of the Problem

Organizational leaders made BPR popular in the early 1990s (Hammer & Stanton, 1995), which led to research on BPR's success factors (Mahmoudi & Mollaei, 2014; Mariado, Guimaraes Valerie, & Guimaraes, 2013), including how BPR may create a competitive advantage (Nadarajah & Kadir, 2014). Researchers also examined BPR implementation and post-implementation processes (Ali, 2012; Asmare & Molla, 2013). Common themes that emerged from these studies included (a) organizational leader perceptions of successful or unsuccessful BPR implementations, (b) organizational leader perceptions of how the use of BPR dismantled interdepartmental silos within an organization, and (c) the effects of various leadership styles on the BPR effort (Ali, 2012; Asmare & Molla, 2013):

Even though several organizational leaders have experienced successful reengineering efforts, many others have not. In fact, up to 80% of BPR initiatives fail (Guimaraes & Paranjape, 2013). Organizational leaders both measure BPR initiatives successes differently and measure the BPR success by the degree to which the

organizational leaders met their objectives for the BPR initiative (Hammer & Stanton, 1995). Measurement can be as specific as saving a certain amount of money or as general as expediting time to get a product to market. Hammer and Stanton (1995) identified 10 mistakes organizational leaders make when undergoing a BPR effort; however, no subsequent academic researcher has validated or invalidated these mistakes, and Hammer and Stanton did not publicize the results of their consultative studies or their experiences describing why organizations fail.

Problem Statement

Guimaraes and Paranjape (2013) found that organizational leaders who implemented a BPR initiative experienced up to an 80% BPR failure rate. Despite this failure rate, as of 2015 more than 67% of organizational leaders still used BPR (Sungau & Ndunguru, 2015). The general business problem is a high level of unsuccessful BPR initiatives exist (Guimaraes & Paranjape, 2013). The specific business problem is that organizational leaders who implement BPR do not know the required factors to implement a BPR initiative successfully and do not know if an individual's gender or education level influences his or her perception of the factors' successful BPR implementation.

Purpose Statement

The purpose of this quantitative, nonexperimental, cross-sectional study was to understand the required BRP factors necessary to increase BRP implementation success rates and to determine if an individual's gender or education influenced his or her perception of a successful BPR implementation. The dependent research variable was the

LinkedIn and American Society for Quality (ASQ) member perceptions of factors that contributed to BPR success. The independent variables were the members' gender and education level. The specific population for this study was LinkedIn and ASQ members whose geographic location varied because of the nature of the online survey. As the researcher, the findings of this study may positively contribute to social change by identifying successful BPR factors intended to help organizational leaders understand the necessary elements for successful BPR implementations.

Nature of the Study

The three main research methods are quantitative, qualitative, and mixed-model methods. Researchers use each method to provide different insight into a research problem. Researchers should not select a research method based upon personal preferences; instead, they need to let the research questions determine the type of study (de Kock, 2015).

Researchers use the quantitative research method to collect, analyze, interpret, and write results of a study that include larger sample or effect sizes (Gaskin, 2014). Researchers use this type of study to identify a population so they may test independent and dependent variables. In addition, researchers use a quantitative study to focus on testing predetermined hypotheses and to produce more generalized results that have statistical reliability and validity (de Kock, 2015).

Qualitative studies surfaced in the late 20th century as an alternative to the quantitative study. Researchers use the qualitative research methodology to ask open-ended questions, interpret pictures or representations, and to analyze the information

collected (Mukhopadhyay & Gupta, 2014). Researchers also used qualitative studies to explore sophisticated, complex human behavior, and with this method, the researcher often becomes an integral part of the research process, driving the process toward the reasons behind occurrences (Iqbal, 2012). A researcher tends to be more involved in qualitative research than quantitative research because of its specific nature, which may include smaller sample or effect sizes (Gaskin, 2014).

A mixed-methods study is an alternative method that researchers may use when conducting research. A mixed-methods study allows the researcher to answer the same research question from two angles and allows the researcher to use inductive and deductive logic to strengthen a study (de Kock, 2015). Because the researcher uses both the quantitative and qualitative research methods in the mixed-model method, the researcher is conducting two studies in one, which may take the researcher longer to conduct the study. Researchers may benefit by using a mixed-model method because the mixed-model method combines statistical reliability and validity from a quantitative research study with the complex, sophisticated human side of research that researchers use in qualitative research (de Kock, 2015).

As de Kock (2015) advised, the research question dictates the type of study to use in this research, and based on my research question, a quantitative research methodology made the most sense. The purpose of this study was to help organizational leaders who implement BPR to understand the required factors that they need to increase BRP implementation success rates by preparing the organization's employees for the BPR

initiative and to determine if an individual's gender or education level influenced the perception of a successful BPR implementation.

I used the quantitative method instead of the qualitative method because researchers use the quantitative research method to test a hypothesis (de Kock, 2015). Additionally, quantitative research has stronger statistical reliability and validity than the qualitative method, less bias than the qualitative method, and allows the researchers to remain at an objective distance (de Kock, 2015). Although the mixed-model research method contains both a qualitative and quantitative component to research, using a mixed-model method would have required conducting a qualitative portion of this study. The goal was to collect the data, analyze the data, and present the data from an objective point of view (Iqbal, 2012); therefore, a mixed-method approach was not appropriate (de Kock, 2015; Gaskin, 2014; Mukhopadhyay & Gupta, 2014).

Within quantitative research, a researcher can choose between an experimental or nonexperimental research design (Daniel, 2012), depending upon the research question. Researchers use experimental design to determine if a certain type of treatment affects the outcome and a nonexperimental design to determine statistical trends, attitudes, and opinions (Daniel, 2012). Researchers may use one of two subsets of the nonexperimental design: the cross-sectional or the longitudinal survey design (Knies & Leisink, 2014). I used the nonexperimental design, specifically the cross-sectional design, because the goal was to identify statistical factors or perceptions of why BPR is or is not successful.

In a cross-sectional design, researchers take a snapshot of a population for the survey collection and population testing, and in a longitudinal study, the researcher

collects data from the population over a period of time (Brown, Chen, Gehlert, & Piedmont, 2012). For this study, I identified a population during one period in time, surveyed that population, and then analyzed the survey results of the population's beliefs or perceptions of why BPR is or is not successful. This approach ensured easy identification of BRP success factors and determining if gender or education level influenced the perception of a successful BPR implementation. The experimental design, which includes creating test and nontest groups, was not the best design for the study because the goal was not to compare groups, but to identify factors of perceived perceptions of BPR success or failure.

Research Question

The research question for this study was as follows: If nearly 80% of BPR implementations fail, then why do more than 67% of organizational leaders use BPR (Guimaraes & Paranjape, 2013; Sungau & Ndunguru, 2015)? Hammer and Stanton (1995) suggested that organizational leaders continually make the same 10 mistakes when they implement BPR initiatives including: (a) reengineering only a department or a few departments, (b) focusing only on an organization's processes during the BPR, (c) spending too much time on the current state, (d) lack of strong executive leadership during the BPR, (e) timid organizational leadership, (f) going directly from a conceptual to implementation phase, (g) taking too long to complete the BPR, (h) reengineering the whole company, (i) leadership adapted a conventional implementation, and (j) ignored employee concerns. I explored these questions to identify perceived factors that contribute to BPR success or failure so that organizational leaders can use this

information to increase BPR implementation rates. The following research questions guided this study toward answering the overall research question:

1. Is there a statistically significant gender main effect on a linear combination of perception of BPR success factors?
2. Is there a statistically significant education main effect on a linear combination of perception of BPR success factors?
3. Is there a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors?

Hypotheses

The hypotheses are as follows:

$H_0$1: There is not a statistically significant gender main effect on a linear combination of perception of BPR success factors.

$H_1$1: There is a statistically significant gender main effect on a linear combination of perception of BPR success factors.

$H_0$2: There is not a statistically significant education main effect on a linear combination of perception of BPR success factors.

$H_1$2: There is a statistically significant education main effect on a linear combination of perception of BPR success factors.

$H_0$3: There is not a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors.

$H_1$3: There is a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors.

Theoretical Framework

The theoretical framework for this study is Lewin's (as cited in Swanson & Creed, 2014) field theory, published in 1951, which provided a lens for analyzing causal relationships to ground. Field theory has a strong connection to Gestalt psychology and its premise that even though two people may view the same occurrence, each person will interpret the occurrence differently based upon his or her personal experiences (Burnes & Cooke, 2013; Swanson & Creed, 2014). Lewin's field theory focused on the concept of change, and for a change to occur, the organizational leaders must alter something within the organization, and there must be driving forces on both sides of the change (Kruglanski et al., 2012). This theory fit this research because the goal was to determine if the independent variables, a person's gender or education level, influenced a person's perception of BPR success or failure factors, the dependent variables. BPR represents the change within the organization, and the dependent variables represent the driving forces of the change.

Operational Definitions

American Society for Quality (ASQ): The ASQ is a global professional organization. Its members come from a variety of professional industries, and they all share a dedication to quality within their respective industries. These professionals believe in bringing the best people, tools, and ideas together to make the world work better (ASQ, n.d.).

Business process reengineering (BPR): BPR is the radical redesign of processes (Hammer & Stanton, 1995).

Continuous improvement: Continuous improvement is a concept that ensures that products and services become better, even if there is not a problem with the product or service. Leaders within organizations use continuous improvement to improve continuously the organization's products or services so that consumers continue to use the product or service (Hozak & Olsen, 2015; Patyal & Koilakuntla, 2015).

International Organization for Standardization (ISO): ISO is a process improvement methodology that offers guidance and standards for organizations worldwide (ISO, n.d.).

Lean: The main purpose of Lean is to eliminate waste while increasing customer satisfaction with the product. Eliminating waste includes decreasing the amount of money spent on the product, workspace, and employee involvement without compromising the integrity of the product (Murugeason, Rajenthirakumar, & Chandraskear, 2016; Wittrock, 2015).

Lean Six Sigma: Lean Six Sigma is a statistical process improvement methodology that is a combination of Lean and Six Sigma (Rohac & Januska, 2014).

Quality assurance: Quality assurance is a measure of repeated actions organizations take to check their product to ensure that the final output meets and maintains the needs of the supplier and the customer (Weckenmann, Akkasoglu, & Werner, 2015).

Six Sigma: Six Sigma is a process improvement methodology that uses statistical analysis to improve products and services. Six Sigma focuses on improving defects in a

product. Define, measure, analyze, improve, and control (DMAIC) are the phases of Six Sigma (Yüksel, 2012).

Total quality management (TQM): A process improvement methodology with a goal to achieve customer satisfaction by improving products, processes, and services effectively and efficiently (Can Kutlu & Kadaifci, 2014).

Value stream mapping: A main component of Lean. The value stream mapping shows the value adding and non-value-adding parts of a process from end to end (Rohac & Januska, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions that researchers make regarding their study might impact the research outcome (Böhme, Childerhouse, Deakins, & Towill, 2012). I assumed that the research participants either had held a professional job in the field of quality assurance or that they would be familiar with quality assurance and the different methodologies that fall under the quality assurance umbrella because they had a membership with professional groups associated with quality assurance. Additionally, the study included the assumption that the participants would answer the survey questions honestly, objectively, and accurately, thus creating meaningful data collection.

Limitations

Researchers need to identify limitations or shortcomings of their research studies (Brutus, Aguinis, & Wassmer, 2013). Identified limitations for this research surrounded the participant responses, accessibility to the participant pool, and survey

instrumentation. I could not guarantee that the participants did not collaborate with others prior to responding to the survey, that they answered the survey truthfully, or that all members had a quality assurance background. Nor could the study guarantee the validity of the research results because the study utilized a unique survey instrument, and Camposs, Zucoloto, Bonafé, Jordani, and Maroco (2011) noted that non-validated online survey instruments might limit the validity of research results.

Delimitations

Researchers identify delimitations in their studies to determine the scope of their study (Vladu, Matiş, & Salas, 2012). The delimitations of this study included that I only looked at responses from members of professional groups associated with LinkedIn and ASQ who had experienced a BPR initiative. Delimitations for this research also included the omission of - responses from quality professionals not associated with the LinkedIn and ASQ sites and -omitting participant responses from those who had not experienced a BPR initiative.

Significance of the Study

My findings and analysis of the research served to offer improved understanding of factors that lead to successful BPR implementation for organizational leaders. By understanding factors that attribute to BPR success, organizational leaders may make better-informed decisions about when and how to begin a BPR project. In addition, the findings and analysis of this study contributed to social change by providing additional insight as to why quality professionals on LinkedIn or ASQ perceived that BPR efforts

fail or succeed. This insight may be instrumental in assisting organizational leaders in understanding why quality professionals perceive BPR efforts to fail or succeed.

The information gleaned from this study provided leaders with the tools and knowledge to implement a BPR effort effectively. When an organizational leader implements an improvement such as BPR, and if he or she does so successfully, the organizational leader should eventually see higher organizational profits (Sungau & Ndunguru, 2015). Successful BPR implementation allows the organizational leaders more opportunity to create jobs and pay taxes within a community (Mayer & Ganahl, 2014), both of which could directly affect the quality of life in that community.

A Review of the Professional and Academic Literature

This section includes the literature review that supported the research question, purpose, and hypotheses for this research and the factors or perceptions of factors that have led to BPR implementation failure. The purpose in conducting this study was to identify perceptions of factors of why BPR implementations failed, and this was to ensure that organizational leaders may use this information to increase BPR implementation success rates. The dependent variable for this study was LinkedIn or ASQ member perceptions of factors that contribute to BPR success. The independent variable in this study included the members' demographic information, including gender and education level.

The literature came from various sources, including the Walden Library subscription databases ABI / INFORM Complete, Business Source Complete/Premier, Emerald Management Journals, and Management and Organizational Studies: A SAGE

Full-text collection, as well as organizational websites and textbooks on theory and process improvement methodologies to discuss the research question, purpose, and hypotheses for this study. The search terms used to narrow the academic and professional literature included *quality assurance, change management, worker autonomy, leadership styles*, and *process improvement methodologies*, including *BPR, ISO, Lean, Six Sigma*, and *TQM*. The peer-reviewed and practitioner articles dated from the early 1900s to the present day, with an emphasis on the peer-reviewed literature published between 2012 and 2016.

During the research phase of the literature review, I reviewed various sources, using primarily peer-reviewed scholarly literature. The literature focused on the topic of quality assurance and its various methodologies, how academics and industry professionals use the methodologies, and the benefits and challenges academic and industry professionals face when using each of the methodologies. The total number of peer-reviewed articles used in this study was 131, with 118 published between 2012 and 2016. The peer-reviewed literature came from peer-reviewed academic journals such as *Advances in Management*, *Behavior Research Methods*, *International Journal of Contemporary Research in Business*, *International Journal of Business and Management*, *Journal of Business Case Studies*, *Journal of Managerial Psychology*, *Journal of Organizational Change Management*, *Leadership & Organizational Development Journal*, *Organization Studies*, and *Journal of Applied Behavioral Science*.

In addition to the peer-reviewed, academic journals, the study included 11 secondary sources that were a combination of organizational websites, textbooks on

process improvement, BRP, statistics, research methodologies, and articles that were not peer-reviewed but accepted within the professional arena. To identify which articles to use in the literature review, I assessed each article's relevance, its impact on the business arena, and its relationship to this study's topic.

There has been limited published academic BPR research within the last 5 years. The existing research included BPR topics such as success factors (Guimaraes & Paranjape, 2013), cost benefit analysis (Richard & Agwor, 2015), and implementation (Ali, 2014). Additional BPR research included how BPR efforts may positively affect a customer service organization (Dewi, Anindito, & Suryadi, 2015), the impacts of BPR in the construction industry (Chen, Yang, & Tai, 2016), how a hospital reengineered its payment system (Kuan-Yu & Chunmin, 2013), and Hammer and Stanton's (1995) 10 reasons why organizations fail at BPR.

In addition, I provided an in-depth review of what previous scholars and practitioners thought about the history of quality assurance and process improvement. This review of the literature includes (a) an introduction to quality assurance and process improvement; (b) a brief overview of popular process improvement methodologies, including ISO, TQM, Six Sigma, Lean, and BPR; (c) an in-depth review of BPR, including a literature discussion of its success or failure and best practices, methodology, and its criticisms; (d) gender and education influences in the literature; and (e) process improvement methodologies' similarities and differences. Each section includes a brief history or overview of the methodology and provides examples of its use or application in the business arena.

Continuous Improvement, Process Improvement, and Quality Assurance

Globalization allows customers more choices to purchase products from a wider variety of sources than they could prior to the 1990s, and broadened purchasing has changed the business landscape. Organizational leaders, in turn, have adopted quality assurance and continuous improvement methods to help them make decisions and products that meet customer demands, needs, and expectations (Singh & Singh, 2012). Organizational leaders use continuous improvement to address the organization's overall performance, to sustain a competitive advantage, and to make products and services better; even if there is not a problem with the product or service, reducing or eliminating as many errors as possible is an important part of quality (Gowen, McFadden, & Settaluri, 2012; Nadarajah & Kadir, 2014). As organizational leaders turned to continuous improvement, process improvement, and quality assurance methodologies, they saw increased customer satisfaction and improvement of their company image (Vasileios & Odysseas, 2015).

The quality assurance umbrella encompasses multiple methodologies, including those discussed in this study: BPR, ISO, Lean, Six Sigma, and TQM. Business leaders must take into consideration the different quality assurance methodologies available while understanding not only what each methodology may offer, but also the necessary support that goes into the long-term operational goals of making that methodology work. Improving executive leaders' understanding of the different quality assurance methodologies, and how each methodology systematically approaches a process improvement, could help them make an informed decision to implement a quality

assurance or process improvement program to address a business problem. Even so, the organizational leaders' efforts could still fail due to challenges such as resistance to change, employee attrition (whether voluntary or involuntary), and different leadership styles during design and implementation, and these challenges can contribute to the success or demise of an organization's quality assurance program (Mahdi & Almsafir, 2012; Yadav, 2015).

Process Improvement Methodology Similarities and Differences

McLean and Antony (2014) identified eight themes into which process improvement failures fall: (a) motives and expectations; (b) culture and environment; (c) management leadership; (d) implementation approach; (e) training, project management, employee involvement levels; and (f) feedback. These themes confirmed some of the themes that Hammer and Stanton (1995) identified for why process improvements fail, such as a lack of strong leadership commitment and not having an implementation plan. Each process improvement methodology may not experience all of the failure reasons.

The major similarities between the methodologies are the importance of change management (Alotaibi, 2014; Maher Altayeb & Bashir Alhasanat, 2014; Clark, Silvester, & Knowles, 2013; Mariado et al., 2013; Moturi & Mbithi, 2015), leadership commitment (Alotaibi, 2014; Gotzamani, 2010; Majeed, 2013), and worker autonomy (Majeed, 2013; Sagalovsky, 2015). The major difference between the process improvement methodologies, with the exception of BPR, includes organizational leaders who focus on incremental process improvement. For example, organizational leaders who want to take process improvement a step further and redesign or reengineer the way an organization

manages its work use BPR. Organizational leaders use Lean or TQM to focus on quality; however, the Lean methodology is known more for eliminating waste, while the TQM methodology is known more for the quality of the product. Organizational leaders who use Six Sigma, on the other hand, focus on problem solving and organization (Chrysanthy et al., 2016).

ISO

The ISO emerged in 1947 after the merging of the International Federation of the National Standardizing Associations and the United Nations Standards Coordinating Committee (ISO, n.d). The International Federation of the National Standardizing Associations started in 1926 and focused on mechanical engineering standards (ISO, n.d). The United Nations Standards Coordinating Committee formed during WWII, and its mission was to help with the standardization of equipment developed during that era. After WWII, the leaders of the International Federation of the National Standardizing Associations and United Nations Standards Coordinating Committee collaborated to create the ISO because of the shared vision to have a common standard. The ISO offers guidance and standards for organizations worldwide (ISO, n.d.). These standards include social responsibility, risk management, quality management, and environmental management, or ISO 26000, ISO 31000, ISO 9000, and ISO 140000, respectively.

The ISO created five segments for which organizational leaders can strive to apply: quality management; management responsibility; resource management; product realization; and measurement, analysis, and improvement (Gotzamani, 2010). According to Gotzamani (2010), organizational leaders who use these structures deliver better

products and services by making standardization of these structures necessary for an ISO certification. Gotzamani advised that ISO certification does not mean that an organization's product or service is good, but rather that the employees in that organization follow the same process or steps for delivery of its services or goods. If an organization has a bad product or service, the ISO certification is not a stamp of approval for its product or service (Gotzamani, 2010). As such, organizational leaders need to add processes and procedures to their repertoire of daily business activities within the organization as well as understand the need and implement a change in culture. ISO 9000:2000 places emphasis on the customer and his or her satisfaction (Gotzamani, 2010). For example, although there is not a direct relationship with the customer, organizational leaders who have good systems in place within the organization will provide better services to customers, thus creating higher customer satisfaction rates (Gotzamani, 2010).

Gotzamani (2010) identified success factors for an ISO implementation and certification that included top leadership commitment to organizational and cultural change, managerial and organizational skills (along with allotting of the necessary time to implement the change), and active participation. Such factors translate to top management's buy-in and commitment to the process (Gotzamani, 2010). Employees in an organization cannot manage a process until top management shows its commitment to the process. The ISO organization created ISO 9000:2000 and included the following principles: top management commitment, focus on process management, and focus on the customer, continuous improvement, and goal setting (Gotzamani, 2010).

Most of the research studies to date focused on ISO 9000's impact on organizations, and not on the organization's adaption of ISO 9000 (Manders, de Vries, & Blind, 2016). ISO certification shows that an organization's employees follow the same process repeatedly to deliver the organization's good or service; however, if an organization has a bad product or service, the ISO certification is not a stamp of approval for its product or service. In addition, ISO certification does not mean that the organization's employees adopted ISO's methodology and incorporated the ISO culture (Manders et al., 2016). Critical success factors for obtaining and sustaining ISO certification include (a) management commitment, (b) organizational continuous improvement, (c) employee training, (d) communication of roles and responsibilities, and (e) participative employee involvement (Moturi & Mbithi, 2015). Chatzoglou, Chatzoudes, and Kipraios (2015) found that ISO adaptation has a positive impact on organizational operational efficiency, customer satisfaction, sales revenue, and financial performance. Despite this finding, after organizations obtain the ISO certification, employees are not necessarily prone to accept to the premise of ISO and often revert to the culture that existed prior to the certification, thus not adapting to the intended ISO culture (Ong, Kathawala, & Sawalha, 2015).

TQM

Organizational leaders in post WWII Japan saw financial growth because of the influences of W. Edwards Deming, Peter Drucker, and Philip Crosby's philosophies on quality improvement (Thye, 2011). Deming (as cited in Thye, 2011) introduced the concept of the importance of organization leaders having their organizations create

quality products so that customers return to that organization and become repeat customers. Drucker (as cited in Thye, 2011) introduced the philosophy of the knowledge worker, and Crosby (as cited in Thye, 2011) introduced the zero-defect model that advised organizational leaders to strive for zero defects during production. According to Crosby (as cited in Thye, 2011), anything above zero defects requires rework and erodes organizational profits. These three individuals laid the foundation for how organizational leaders understand TQM in 2016.

TQM is a continuous improvement methodology that became popular in the 1970s. When someone uses TQM, that person focuses on individual process improvement (both product and service) and customer satisfaction (Jafar, Mohammad, Fariba, & Chegini Mehrdad, 2010). Major components of TQM include (a) management responsibility for continuous improvement; (b) focus on work processes and improvements, statistical measurement of process performance, and employee involvement; and (c) empowerment (Jafar et al., 2010). Once industry leaders began focusing on customers, the paradigm shifted in the way organizational leaders thought about work.

Organizational leaders use the TQM methodology as a way to improve services and products, but TQM does not have the ability to measure directly the financial impact the continuous improvement has on the organization's bottom line (Mitreva & Taskov, 2015). Making a decision to apply the TQM methodology may cause a change in the way an organization's culture operates. Yadav (2015) advised that TQM is more than a continuous improvement philosophy: TQM is a journey that an organization must take.

Rather than just the destination, TQM is continuously challenging the status quo to become better.

Success factors for TQM include leadership commitment, specifically transformational leadership, a positive organizational culture, strategy and planning, communication, and change management (Alotaibi, 2014; Maher Altayeb & Bashir Alhasanat, 2014; Mosadeghrad, 2015; Salagean, 2014). Yadav (2015) identified a TQM implementation roadmap to help organizational leaders not lose sight of the TQM success factors. The roadmap steps include (a) securing top management commitment, (b) developing a mission, vision, and quality plan, (c) developing an implementation plan, (d) establishing an education and training program, (e) starting an implementation phase, and (f) maintaining the implementation with continuous improvement efforts.

Six Sigma

Six Sigma is a quality management tool that gives something an exact measure of quality, which is 3.4 defective parts per million (Yüksel, 2012). Six Sigma is a process tool that organizational leaders use as a problem-solving methodology, and to identify and solve root cause defects by analyzing data in the define, measure, analyze, improve, and control (DMIAC) methodology (Yüksel, 2012). Using statistical methods is a fundamental basic when applying the Six Sigma methodology (Evans, 2015). An individual with Six Sigma training has a Green Belt, Black Belt, or Master Black Belt. The differences between the three belt levels are the individual's experience with Six Sigma tools, projects, and statistics. A person with a Green Belt ensures the application of Six Sigma tools and works as a project team member. A person with a Black Belt is

the master in the industry or field and is an expert at applying the statistical tools to design a solution for the root cause, and a person with a Master Black Belt is a coach or mentor (Mahdi & Almsafir, 2012).

Organizational leaders use this philosophy to break down an operation to see where the problem begins. Leaders use this methodology to fix a problem within a process, but not for redesigning the entire process. Some success factors that organizational leaders need to employ during a Six Sigma implementation are management involvement and commitment, change management, process management, and information sharing, and continued communication - after the implementation, and communication (Arumugam, Antony, & Linderman, 2014). If organizational leaders focus on these topics and make adjustments as needed, they likely will experience success with the Six Sigma implementation.

Six Sigma became popular with organizational leaders because of its ability to provide for better quality products that cost less to make and its connection with helping an organization to achieve a sustainable competitive advantage. Because organizational leaders experienced the a sustainable competitive advantage when they used Six Sigma, industry leaders outside of manufacturing adapted and altered as needed Six Sigma's methodology for their purposes (Mahdi & Almsafir, 2012). Medical doctors also reported gained efficiencies and a sustainable competitive advantage when they adopted the Six Sigma methodology (Mahdi & Almsafir, 2012).

When an organizational leader makes a decision to employ the Six Sigma methodology, one of the first steps is to map out the suppliers, inputs, processes, outputs,

and customers, or SIPOC (Carlson & Sammis, 2009). Once organizational leaders identify the SIPOC, they have a picture of the overall process that the company must go through to complete its product. According to Carlson and Sammis (2009), the story of how Corning transformed from making lights for trains to the baking cookware industry shows how the organizational leaders used the SIPOC process from Six Sigma even before its invention. The Houghton family, the founders of Corning, focused on innovation that came from improving process by working cross-functionally with internal and external parties, ranging from highly educated workers to skilled laborers (Carlson & Sammis, 2009). The organizational leaders used process management, by taking all of the processes where they found Six Sigma fixes and fit them into a higher level or organizational process. Carlson and Sammis (2009) coined this cross-functionality of work at Corning *diversity of thought*.

Lean

The Lean process improvement methodology relates back to the Toyota Core Production System and, under the premise of reducing or eliminating waste in a process, allows organizational leaders to be more efficient (Wittrock, 2015). Types of waste include (a) overproduction, (b) unnecessary inventory, (c) excess motion, (d) waiting, (e) transportation, (f) inappropriate processing, (g) non-right the first time defects (Murugeason et al., 2016). In addition to the concept of eliminating waste, a component of the methodology includes value stream mapping. Value stream mapping allows leaders to identify value-adding and non-value-adding parts of a process from end to end, identifies process bottlenecks, and helps to identify where opportunities exist to improve

a process (Rohac & Januska, 2014). Sunder (2016) found that lean organizations can double their product with increased quality in less time while cutting its costs.

Lean is about people doing the work more efficiently, not just implementing the tools that make the work more efficient (Wittrock, 2015). As such, organizational leadership needs to support the Lean initiative by creating and maintaining a Lean culture (2015). Organizational leadership may achieve this by encouraging staff to attend Lean trainings to understand the tools in the industry and by providing the staff with the opportunity to test and perfect the tools within the organization (Boyle, Scherrer-Rathje, & Stuart, 2011).

Although people often associate the automotive industry with Lean, other industries, such as banking and finance, are starting to see its benefits (Sullivan, Soefje, Reinhart, McGeary, & Cabie, 2014). Organizational leaders are beginning to understand that Lean is more than a set of process improvement tools; Lean is a set of values within an organization, a paradigm shift by which the organizational leaders make a commitment to the tools (Wittrock, 2015). For a Lean effort to be successful, the whole organization must undergo the effort; this is a long-term commitment, and the organizational leaders must be committed to adopting and applying the Lean methodology (Sagalovsky, 2015). This type of effort is a major change that requires leadership commitment and employee engagement and execution (Clark et al., 2013).

Lean Six Sigma is another methodology that organizational leaders use to focus on process improvement and problem solving. Lean Six Sigma is the combination of the Lean and the Six Sigma process improvement methodologies (Wittrock, 2015).

Organizational leaders use the Six Sigma methodology to focus on producing high quality and low variability with the use of statistical data, they use the Lean methodology to focus on the timely delivery of the right quantity and quality to the customer, and Lean Six Sigma's overall goal is process efficiency (Chrysanthy et al., 2016).

Despite the benefits of increased process efficiency and reduction of waste, organizational leaders can face employee resistance to change when implementing Lean and Lean Six Sigma efforts. The resistance can stem from the unknown of the new state of conducting business, unclear roles and responsibilities, supervisory roles, and lack of worker autonomy (Sagalovsky, 2015). Sagalovsky (2015) suggested to mitigate this resistance to have strong leadership commitment and continued worker autonomy. Sunder (2016) found failure of appropriate stakeholder management increased the failure of the Lean Six Sigma initiatives, and Sisson and Elshennawy (2015) found that strong top leadership commitment to the Lean initiative and the total organizational transformation is a key factor for Lean success.

As previously mentioned, the quality assurance umbrella encompasses multiple methodologies, including those discussed in this paper: ISO, Lean, Six Sigma, TQM, and BPR. Hammer and Stanton (1995) made BPR popular in the 1990s. ISO, TQM, Six Sigma, and Lean precede BPR. As BPR's predecessors, these process improvement methodologies provided a framework for the BPR process improvement methodology.

BPR

BPR is a total disruption of the way things currently operate, and encourages organizations to fundamentally rethink and redesign in a radical manner how they go

about business (Hammer & Stanton, 1995). Reengineering means redesigning the way leaders operate their organization and how they satisfy the customers' needs, while providing drastic financial improvement for the organization (Hammer & Stanton, 1995). Organizational leaders make decisions to use BPR because their goal is to go beyond incremental process improvements and to redefine how an organization operates (Hammer & Stanton, 1995). BPR assists organizational leaders in improving their internal functions to meet business objectives (Ghanadbashi & Ramsin, 2016). Organizational leaders from a range of industries, including, but not limited to, construction, customer service, banking and finance, and healthcare, have used the BPR methodology within their organization to help meet their business objectives (Chen et al., 2016; Dewi et al., 2015; Kararic & Zavrski, 2012; Kuan-Yu & Chunmin, 2013; Smith, Spackman, Brommer, Stewart, Vizzini, Frye, & Rupp, 2013). BPR not only helps organizational leaders meet their business objectives, BPR implementation may also attribute increased effectiveness, increased efficiency, reduction in overhead cost, making jobs more meaningful, and increased business strength and reliability (Richard & Agwor, 2015).

Although Hammer (1995) (as cited in Hammer & Stanton, 1995) meant for BPR to be associated with reengineering an entire organization, organizational leaders used its concept to reengineer processes within the organization. For example, Chen et al. (2016) showed how BPR could improve one process in precast production in the construction industry. Hammer and Stanton (1995) did not intend for organizational leaders to use BPR in instances such as this, not did Hammer and Stanton design BPR to focus on

functional rationalization or new software or computer system implementation. Rather, according to Hammer and Stanton, reengineering means redesigning the way organizational leaders operate their organization and how they satisfy the customers' needs while providing drastic financial improvement for the organization.

BPR methodology. To perform reengineering, organizational leaders must understand the required steps or methodology to achieve that effort. Often, however, leaders cannot articulate their own processes. Instead, organizational leaders often discuss that they have a sales department, a human resources (HR) department, and even a billing department (Hammer & Stanton, 1995); however, departments are not processes. Processes involve sequential actions, being cross-functional, and are results-oriented (Hammer & Stanton, 1995). Processes that cross boundaries or departmental lines rely on one another both upstream and downstream, geared toward the inputs and outputs for customers: something is not a process if that said something does not serve the customer (Hammer & Stanton, 1995). Abu Rub and Issa (2012) found that many organizational leaders still manage by function and not process, and this limits the organizational leader's ability to institute a solid BPR effort or to manage effectively existing processes.

Erkan, Rouyendegh, and Salar (2014) identified a BPR methodology that organizational leaders must follow to implement BPR: (a) prepare for the BPR, (b) map and analyze the as-is processes, (c) design the to-be processes, (d) implement reengineering processes, and (e) improve continuously. Bevilacqua, Ciarapica, and Piciarotti (2014) used a portion of this model to assist in improving an emergency

response system by mapping and analyzing the as-is process, designing the to-be process, implementing the reengineered process, and monitoring for improvement.

Asmare and Molla (2013) further identified mapping the as-is and to-be processes as a BPR construct. In addition, Hammer and Hershman (2010) recommended using a cross-functional team within the organization as the group of experts when an organization starts a process design session. These experts are the organization's talent and should come from different educational backgrounds, different lengths of tenure within the company, and different ranks and titles (Hammer & Hershman, 2010). These experts in the talent pool ensure that those involved with BPR discuss topics from many perspectives, thus driving toward the best process design (Majeed, 2013). A BPR effort requires a team of people who have the authority to make strategic decisions, or a process owner who has the authority to make strategic decisions (Groznik & Maslaric, 2012). Hammer and Stanton (1995) suggested that some workers would not like the introduction of a process owner.

Training is a key element of the methodology; however, as Lu and Betts (2011) found, training does not automatically equal a successful implementation. There are several aspects to training, including on the job training, formal training, and coaching. According to Lu and Betts, organizational leaders can train employees on how to perform a task as part of a process improvement or reengineering effort, but employees still must be able to apply the learned skill. Training is the first step, but reinforcement of training and time will make the biggest impact (Lu & Betts, 2011).

BPR best practices and critical success factors. BPR success factors include supportive and engaged egalitarian management; top management support; a solid strategy to manage the BPR; consistent, effective communication; an organizational culture that fosters collaborative; cross-functional team environments; employee training; and change management (Ali, 2012; Bin Taher, Krotov, & Silva, 2015; Ghadim & Abdolkarimi, 2012; Iqbal, Nadeem, & Zaheer, 2015; Mahmoudi & Mollaei, 2014; Mariado et al., 2013; Sikdar & Payyazhi, 2014). An organization's culture helps dictate whether the organization is ready for a BPR implementation. Haghighat and Mohammadi (2012) found that if an organization has a culture that fosters collaboration, then employees are more likely to understand and accept the need for the BPR initiative. If an organization's leadership wants the BPR effort to be successful, the leadership must manage the culture effectively.

BRP criticism. Understanding BPR criticisms will aid in successful implementation as Heusinkveld and Benders (2012) found that despite the idea that BPR may be a fad; organizational leaders perpetually reused or relabeled BRP because of both positive and negative implementation experiences. Another criticism is that BPR is a management tool used to downsize an organization's workforce during a recession (Mirabala, 2011). Mirabala (2011) stated that organizational leaders rely on BPR to eliminate unnecessary layers or hierarchy within an organization in order to reduce costs. By contrast, Hammer and Stanton (1995) stated that BPR's purpose is to focus on processes from end to end and help to create processes that are more efficient; its purpose is not to downsize. Because of the BPR, initiative jobs might change and organizations

could become more efficient with fewer people (Hammer & Stanton, 1995). When organizational leaders make the decision to implement a reengineering effort, they not only change the way the employees of a company conduct business pertaining to its inputs and outputs, they also change job functions and people (Hammer & Stanton, 1995).

Despite the opposition and criticism to BPR, Nwabueze (2012) found that organizational leaders do not have to downsize when implementing BPR. Nwabueze (2012) conducted research on a manufacturing drug company where the organizational leadership reengineered without downsizing or eliminating positions. Instead, the organizational leaders used the employees as intellectual property to help propel the BPR effort forward (Nwabueze, 2012). By contrast, Richard and Agwor (2015) found that a successful BPR implementation resulted in a workforce reduction because of the introduction of automated processes

Gender and Education Influences in the Literature

Gender may sometimes influence how a person perceives a situation or an experience as it relates to power tactics and personal beliefs he or she uses at work (Ganesh & Ganesh, 2014; Schwarzwald, Koslowsky, & Bernstein, 2013). The two types of power tactics are masculine and feminine (Schwarzwald et al., 2013). In general, men are more adept at demonstrating feminine power tactics than women are at demonstrating masculine tactics (Schwarzwald et al., 2013).

Whelan-Berry (2013) found that although there were no statistically significant differences between the genders relating to change drivers, men believed that vision- and

change-related training had more significance than females did, and females were more likely than males to believe that that positive outcomes and communication had more significance. Whelan-Berry also suggested that as more women infiltrate the workforce, these results might change. In a gender related study, Westelius, Westelius, and Brytting (2013) found no statistically significant difference between genders and how each gender preferred to find meaning in his or her private life in comparison with his or her professional life.

In another study, Lee and Marvel (2014) found that female entrepreneurs underperform their male counterparts. Other research showed that few differences exist between male and female thinking and applying business acumen to a family-owned business, and how gender influences role models (Parent & Oliver, 2015; Sonfield & Lussier, 2012). However, Sonfield and Lussier (2012) did find that there was a significant difference in individual verses group decision-making trends between men and women.

For both genders, process management and process improvement closely tie to the workforce environment; however, employers and professional associations highlight that college graduates do not have sufficient education related to process management, which presents challenges for graduates working in a customer and process-centric environment (Seethamraju, 2010). Yet, Lu and Betts (2011) articulated that organizations need well-educated and well-trained employees to be successful. Education or, more specifically, a person's business education, indicated that that person might have more influence on a stakeholder's management (Godos-díez, Fernández-gago, & Cabeza-garcía, 2015).

Change Management

Change management differs from process improvement in that change management is a critical step in the success of a company's adoption of a process improvement methodology (Al-Haddad & Kotnour, 2015; Vora, 2013). Organizational cultural change is more than planning and delivering a training program; culture change requires leadership commitment and continuously challenging the status quo within the organization (Kusy & Holloway, 2014). For example, when people at work face change, or something different from the status quo, some might cling to a sense of stability and to those people they think are the change agents, who influence their acceptance of the change (Fuchs, 2011). Fuchs (2011) also found a small correlation between an employee's resistance to change and his or her emotional attachment to a manager who is the change agent. Similarly, employees who identify with their superiors are more likely to accept change (Fuchs, 2011). People in positions of power are more successful in communicating, leading, and implementing change (Appelbaum, Habashy, Malo, & Shafiq, 2012).

Discussing change, accepting change, and implementing change are different processes. Organizational leaders who try to implement process improvement and reengineering efforts fail not because of employee resistance to change but because of how the leadership managed and dealt with change and did or did not support the change effort (Hammer & Stanton, 1995). Failing to talk about the change effort, not socializing the change within the organization, and not communicating the effort repeatedly are also reasons leaders fail (Hammer & Stanton, 1995). For change management to be

successful, employees must accept the change. If people do not understand the change, or what is changing, they cannot begin to go through the change process (Burnes & Cooke, 2013). People and their behavior, therefore, can influence the successful design and implementation of a process, a redesign, or a BPR initiative (Xiang, Archer, & Detlor, 2014). Because of this, constant communication is important.

Organizational leaders can engage employees during a process improvement or BPR initiative in three ways: (a) decree, (b) participation, or (c) consensus (Hammer & Stanton, 1995). While limiting the potential lingering of change can remove some nervousness among employees, multiple changes at once can create anxiety and unclear direction if not managed well. Hammer and Stanton (1995) also advised implementing change quickly does not allow the idea of change to linger.

Organizational change takes place over time and its success varies from organization to organization. Effective change management practices include understanding the change, having clear strategies and policies to address the change, clearly communicated deadlines for the change, leadership initiation, strong project management skills, and the right talent management pool (Ionescu & Bolcas, 2015; Vora, 2013). Having this in place, along with the change objectives, might reduce the employee resistance to the change (Ionescu & Bolcas, 2015). Al-Haddad and Kotnour (2015) advised for a higher change success rate, leaders need to plan the change, adapt the necessary critical change success factors, and choose a change methodology and adhere to the methodology until the organization meets all of the desired outcomes.

Al-Haddad and Kotnour (2015) discussed Lewin's field theory change model as one of the change models needed for successful change management. Lewin's theory discussed the unfreezing the organization's current state, implementing the change, and then refreezing the state (as cited by Al-Haddad & Kotnour, 2015). In the middle, when the leaders implement the change, they need to have the right incentives, leadership commitment, and problem solving techniques available (Al-Haddad & Kotnour, 2015). An organizational leader's communication and a communication style may also have an impact on how employees adapt to a change (Paula Matos & Esposito, 2014).

Leadership Capabilities and Commitment

Leadership commitment is a necessity for all of the process improvement methodologies. In BPR research, for example, Goksoy, Ozsoy, and Vayvay (2012) found that while more than 50% of 155 participants questioned neither disagreed nor agreed with the opinion that BPR needs top leadership commitment, while slightly over 30% of the same population believed that BPR needed top leadership commitment. Top management needs to support all phases of the BPR initiative (Sikdar & Payyazhi, 2014).

BPR and continuous improvement efforts also require leadership with specific skills. Required skills include strong communication, how to manage change, effectively run meetings, management of financial resources, and being able to answer hard questions without placing blame (Studer, 2014). In addition, leadership commitment can mean more than the organizational leader (Taher & Krotov, 2016). Leadership may also be in the form of the BPR leader or project manager. The BPR project manager needs to

have a level of influence within the organization to ensure that he or she can maneuver the political arena of the organization (Taher & Krotov, 2016).

Leadership commitment depends, in part, on leadership styles. Transformational leadership and effective leadership are key leadership styles for implementing and sustaining BPR and continuous improvement efforts (Ayra, 2012). Arya (2012), for example, found that transformation leadership aided the healthcare industry with new system and process improvement designs. Arya (2012) also found that the transformational leaders had to have a transformational vision so that they could lead and inspire the employees to make the necessary changes for the process improvement success.

Characteristics of effective leadership include leaders who can create a vision and take employees along on a vision's journey (Becker & Glascoff, 2014). In addition to inspiring employees, effective leaders understand their customers and always work towards meeting those customer needs (Becker & Glascoff, 2014). In addition, leaders need to have an understanding and ability to execute ethical behaviors, ability to inspire, orchestrate, and evaluate change, and have the ability to create an environment that fosters curiosity, learning, and continuously improving to serve the customer (Bottomley, Burgess, & Fox, 2014).

Employee Autonomy

Employee autonomy is a part of Lean, TQM, and BPR philosophies. When organizational leaders use the TQM methodology, they will need to change how the organization conducts business, usually by providing more autonomy to individual

employees, and by creating a culture of openness (Sinha, Garg, Dhingra, & Dhall, 2016). Employee autonomy may lead to higher employee satisfaction, and it can increase a person's adaptiveness to change because they are empowered to make more decisions (Li, Liu, Yi, & Zhang, 2016). Jetu and Riedl's (2013) research support increased employee autonomy as a predictor of a successful BRP implementation. When organizational leaders want to implement BPR, usually the goal is to have as few actors as possible performing the tasks within that process (Hammer & Stanton, 1995).

Employees who have autonomy in their work tend to have higher job satisfaction (Jong, 2016). Madanagopal and Thenmozhi (2015) found that workplace autonomy allows employees the opportunity to work to their personal strengths. Organizational leaders may enhance employee autonomy by introducing working teams, such as those that are cross-functional or self-managed. Employees who are part of working teams have less absenteeism and more job satisfaction (Mosadeghrad, 2015). This changes the paradigm of the employee-supervisor relationship and relates back to how process improvement methodologies provide employee autonomy, which can lead to improved employee productivity and job satisfaction.

Transition

Section 1 included the purpose of the study, the study's problem, and the theoretical framework. The purpose of the study identified perceptions of factors of why BPR implementations fail so that organizational leaders may use this information to increase BPR implementation success rates. The general problem explored was the high level of failed BPR implementations. The literature review included information on

quality assurance and process improvement, and touched upon some of the process improvement methodologies including ISO, TQM, Lean, and Six Sigma while spending more time on BPR. I presented existing research on BPR ranging from BPR success factors (Mahmoudi & Mollaei, 2014; Mariado et al., 2013), how BPR may create a competitive advantage (Nadarajah & Kadir, 2014), and BPR implementation and post implementation (Ali, 2012; Asmare & Molla, 2013). The literature review also included discussion regarding worker autonomy and change management, two major themes that transcend across successful process improvement methodologies. The study findings could add to the existing body of knowledge and provide organizational leadership with factors to consider for a successful BPR implementation. The following section includes a refined purpose statement and more insight into research participants, method and design, population and sampling, data collection, reliability, and validity.

Section 2: The Project

This section includes the outline of the applied business research questions from Section 1 and details of how I collected and analyzed responses from participants. Information on my role, the research participants, the research method and design, the research population and sampling, data collection, organization and analysis, and the study's reliability and validity are also included.

Purpose Statement

The purpose of this quantitative, nonexperimental, cross-sectional study was to understand required BRP factors necessary to increase BRP implementation success rates and to determine if an individual's gender or education influenced his or her perception of a successful BPR implementation. The dependent research variable was the participants' (LinkedIn and ASQ members) perceptions of factors that contributed to BPR success. The independent variables were the members' gender and education level. The specific population for this study was LinkedIn and ASQ members, whose geographic location varied because of nature of the online survey. My interpretation of the findings of this study may positively contribute to social change by identifying successful BPR factors intended to help organizational leaders understand the necessary elements for successful BPR implementations.

Role of the Researcher

My role as the researcher in this study included creating the survey instrument and placing the survey on the identified discussion boards on the professional websites LinkedIn and ASQ. Similarly, Petrič and Petrovčič (2014) created a survey and placed

that instrument on discussion boards. I had a LinkedIn membership and was a member of ASQ Region 5, and I used the ASQ section 0502 community as the research population to test a pilot survey by e-mailing the survey via SurveyMonkey to approximately 10 ASQ members in my network.

As dictated by the Department of Health and Human Services Protection of Human Subjects and IRB guidelines, and the Belmont Report (1979), I protected the anonymity of each pilot survey participant by not being able to associate a response with a participant. The survey needed some modification based upon feedback from the pilot participants, which prompted a resubmission of the application to the IRB (Belmont Report, 1979). Similar to Petrič and Petrovčič (2014), IRB granted final approval to post the updated survey to the appropriate discussion boards on the LinkedIn and ASQ websites, collect and store participant data, and analyze the data.

Participants

The research study participants, identified through nonprobability convenience sampling, were members of LinkedIn and ASQ. Researchers use the nonprobability convenience sampling because of their proximity and accessibility to research participants (Wilson, 2014). I followed this sampling technique because of my proximity or accessibility to participants for research purposes. At the time of data collection, the LinkedIn and ASQ professional groups discussed here had a total membership of approximately 95,000 members who chose to become part of the professional group dedicated to quality and quality assurance (ASQ, n.d.; LinkedIn, n.d.). Anyone who was a member of the LinkedIn and ASQ professional groups dedicated to quality and quality

assurance could participate in the survey as long as they worked for a company that went through a reengineering process. Participants had to first purchase a membership to ASQ, join LinkedIn for free, or purchase a more detailed membership (ASQ. n.d.; LinkedIn, n.d.). Once members, participants then had to request permission to join a group on the ASQ or LinkedIn websites, wait for affirmation of acceptance into the group by the group administrator, and then receive access to the group discussion on the respective website (ASQ, n.d.; LinkedIn, n.d.).

To gain access to the participants, I followed this same process. Participants accessed the survey link through LinkedIn, in groups associated with quality assurance and process improvement, and on the community discussion boards on the ASQ website. The survey included information on participant confidentially and a consent form to participate in the study. To help gain a working relationship with the participants, the consent form included ways the participant could reach me with questions or further discussion.

I also visited the discussion boards to monitor questions concerning the survey in order to address those questions. Internet survey responses are approximately 2.2% of the entire sampling population (Kaplowitz, Hadlock, & Levine, 2012; Sinclair, O'Toole, Malawaraarachchi, & Leder, 2012). Based on this statistic, this population of approximately 95,000 members met the study need to obtain a valid population. SurveyMonkey.com, which was password-protected, protected the participants' rights from the beginning of the process. Subsequently, I assured further protection by storing the participant information on a personal computer before transferring the data to a flash

drive that will remain at my personal residence for a period of 5 years, to be destroyed in accordance with Department of Health and Human Services Protection of Human Subjects and IRB guidelines (Belmont Report, 1979).

Research Method and Design

I used a nonexperimental, cross-sectional survey design in this quantitative research study to identify perceptions of factors of why BPR implementations have failed. A quantitative research study allows researchers to test predetermined hypotheses (de Koch, 2015). The nonexperimental, cross-sectional design allows researchers to take a snapshot of the participant pool at a specific point in time (Brown et al., 2012).

Research Method

There are three major research methods: quantitative, qualitative, and mixed-methods (Caruth, 2013; Fassinger & Marrow, 2013). Each offers value to a researcher, with researchers selecting a method for a particular reason such as telling a story through the data collection and display with the qualitative method, providing concise statistical analysis of the data with a quantitative study, or marrying the two methods with the mixed-methods approach (Bansal & Corely, 2012). Gaskin (2014) advised that the nature of a study should dictate the type of method used and that a researcher should not select a method based upon his or her personal preference.

Researchers use the quantitative research method to collect, analyze, interpret, and write results of the study (Gaskin, 2014). Researchers use quantitative studies to identify a population in order to test independent and dependent variables, allowing a researcher to focus on testing predetermined hypotheses and to confirm or disconfirm

those hypotheses (Arghode, 2012; Fassinger & Morrow, 2013). This approach produces more generalized results that have statistical reliability and validity, thus making the research stronger (de Koch, 2015; Gaskin, 2014). The method of writing what the researcher discovered during the study may add a layer of neutrality for him or her, thus creating less bias (Cairney & St Denny, 2015).

Researchers use qualitative studies to interpret pictures or representations and ask open-ended questions, and they use personal interpretation to analyze a study (Iqbal, 2012). Researchers use a qualitative study design when they are exploring human behavior (Iqbal, 2012). The qualitative study design often results in the researcher becoming an integral part of the study. If a researcher becomes an integral part of the study, the researcher can potentially create unconscious bias (Cairney & St Denny, 2015).

Researchers might also use the mixed-methods methodology, which combines aspects of quantitative and the qualitative research methodologies (Borrego, Douglas, & Amelink, 2011). Researchers use this approach because of the ability to provide an opportunity to include different viewpoints that may create the least biased research (Caruth, 2013). If a researcher uses this methodology, he or she must be versed in both qualitative and quantitative methods and using this approach tends to take longer because the researcher is essentially conducting two studies (de Kock, 2015).

The goal of this study was to identify perceptions of factors of why BPR implementations fail. The following research questions guided this study toward answering the overall research question:

1. Is there a statistically significant gender main effect on a linear combination of perception of BPR success factors?
2. Is there a statistically significant education main effect on a linear combination of perception of BPS success factors?
3. Is there a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors?

The quantitative research method allows a researcher to test a hypothesis and use statistical analysis (Gaskin, 2014) and so was the most appropriate approach to my study. When researchers uses the quantitative research method, they have stronger statistical reliability and validity than with the qualitative research method (de Kock, 2015). Although a qualitative method could have been appropriate to study why LinkedIn and ASQ quality professional members perceived something the way they did, this approach would not have allowed me to test relationships between factors. For this study, I chose the quantitative research method over the mixed-model research method because the mixed-model uses both qualitative and quantitative methodologies; this approach did not meet the purpose of this research.

Research Design

Experimental and nonexperiential research designs are associated with the quantitative research method. Researchers use experimental designs to try to determine if a certain type of treatment affects the research outcome, and they use nonexperimental designs to assay subjects and determine if a relationship exists between variables (Brown et al., 2012; Daniel, 2012). When researchers use an experimental design, they will

attempt to identify what the research outcome will be and must use two sample groups: a control group and a noncontrol group, often referred to as a quasi-experiment or a randomized experiment (Daniel, 2012). A researcher uses the nonexperimental research design to try to determine any statistical trend, attitude, or opinion (Daniel, 2012). When researchers use the cross-sectional survey design, they take a snapshot of a population and use that snapshot for the population testing (Brown et al., 2012). Another attribute of the cross-sectional survey design includes a researcher looking at several variables at once (Brown et al., 2012). In a longitudinal research design, the researcher will have to collect data from the population over a period of time (Brown, et al., 2012).

Daniel (2012) stated that the cross-sectional research design allows a researcher to gather data during one period in time verses over an extended period. Knies and Leisink (2014) stated that in a longitudinal design, the researcher collects data from the same participants over a long period. Based on these explanations, I decided to use the nonexperimental research design, and more specifically the cross-sectional research design, because this design allowed me the ability to identify a population during one period in time versus over a period and the ability to collect data in a timelier manner than with a longitudinal design.

Population and Sampling

The research study participants were members of LinkedIn and ASQ. I made an informed assumption that those LinkedIn and ASQ members associated with quality groups also had interest in quality assurance and had a higher likelihood of exposure to a BPR initiative because they belonged to a quality assurance professional discussion

group. Anyone who was a member of a discussion group in which the survey was located could participate in the survey; however, if a participant answered *no* to the item *I have worked for a company that went through a reengineering process*, SurveyMonkey marked the survey as completed and did not collect any additional data.

At the time of data collection, the LinkedIn and ASQ professional groups discussed here had a total membership of approximately 95,000 members who chose to become part of the professional group dedicated to quality and quality assurance (ASQ, n.d.; LinkedIn, n.d.). This volume of members provided the demographic ranges for age, gender, professional title, and professional industry (service, manufacturing, etc.). I used a nonprobability convenience sampling of the population of LinkedIn and ASQ members.

The G*Power sample size calculator is a tool researchers use to identify a required sample size (Faul, Erdfelder, Buchner, & Lang, 2009) and helped me calculate the required sample size for this research. According to the G*Power sample size calculator, this study required a sample size of 91. Refer to Appendix A to view the sample size calculation. Internet survey response rates were approximately 2.2% (Kaplowitz et al., 2012; Sinclair et al., 2012). Based on this statistic, and the 95,000 members of ASQ and LinkedIn, this population met the need to obtain a valid population (ASQ, n.d.; LinkedIn, n.d.). A researcher may obtain higher survey participation rates with Internet survey participants because Internet survey participants typically complete the survey in the comfort of their own home and are not as rushed as they may be if there were randomly stopped while out shopping (Barnham, 2012). At the end of the data

collection period, I added each response by the date and time of return and full completion to the numerical list that started at number one.

Ethical Research

Ethical research is important to protect the rights of the participants (Greaney et al., 2012; Tam et al., 2015). Prior to conducting any research, I learned the correct way to handle participant survey responses by completing the web-based training Protecting Human Participants (Belmont Report, 1979) and received approval from Walden IRB. The Walden IBR approval for the study is # 05-31-13-0020309. My sample population received a consent and confidentiality acknowledgement. When a participant provides informed consent, he or she understands that participating in a study via answering a survey is voluntary, that he or she has the capacity to answer the questions, he or she received a full disclosure about the intent of the survey, and he or she understand how to remove themselves from the survey, and last, the participant made a decision to participate in the survey (Tam et al., 2015).

The participants agreed to participate in the survey, and they agreed to its terms and conditions by submitting the survey because the consent form was the first question of the survey. If the participant declined to consent, the survey ended. If the participant accepted the consent, the survey continued. The consent form consisted of the following: (a) the survey was voluntary, (b) participants would not receive any type of compensation for completing the survey, (c) participant names or the name of organizations for which they worked did not appear, (d) Participants could withdraw their responses to the survey by contacting me via e-mail, and (e) I would store all data on a thumb drive for 5 years at

my residence and will destroy the data in accordance with Belmont Report (1979) and Walden IRB standards at the end of that time. The participants agreed to the terms and conditions of the survey by submitting the survey.

Data Collection Instruments

The study used a 6-point Likert-type scale created especially for this research. The researcher developed a unique survey because no existing survey met the objectives of this study or answered the research questions. As the survey was unique to this study, no published reliability or validity properties exist for the instrument. However, as Pastore and Lombardi (2014) found in their research, application of Cronbach's alpha, (which looks for a correlation of two tests that measure the same construct), to the instrument, as outlined in Section 3, helped ensure the survey's reliability and validity.

The survey items included Hammer and Stanton's (1995) identified reasons why organizational leaders fail at BPR as a basis of the factors to measure. The items were appropriate as Hammer and Stanton provided reasons why organizational leaders fail at BPR implementations; however, researchers have not yet validated these reasons because of the lack of academic research on this topic. The survey included both ordinal and nominal scales of measurement. Malhotra, Mukhopadhya, Xiaoyan, and Dash (2012) found that single scale items suffice for measuring in research.

This research had two scales, ordinal and nominal. The ordinal and nominal scales should be sufficient because of the separation of the demographic questions and the questions related perceived factors that influence a successful BPR (Malhotra et al., 2012). Ordinal questions allow a researcher to categorize the data and count frequency

(Malhotra et al., 2012). When using Likert-type scales, the participant pool must be large enough so that the all of responses are meaningful, and to have a sufficient number of participants using the identified measures across the spectrum (Camphorn, 2012). The ordinal and nominal questions and their conversion for this survey appear below (see Appendix B). As the researcher, I stored the raw data as outlined in the Belmont Report (1979). Anyone with questions regarding the raw data should direct them to the researcher.

Consent Question

1. Agree or disagree to participate in the study (1 = *agree*, 2 = *disagree*).

Content Questions

(Answer based upon the Likert-Type scale where 1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, 5 = *strongly disagree*, 6 = *prefer not to say*)

2. When my company reengineered, the level of the reengineering process was successful.
3. When my company reengineered, the level of the reengineering process was not successful.
4. When my company reengineered, organizational leadership reengineered only a department or a few departments during the reengineering effort.
5. When my company reengineered, organizational leadership focused only on its processes during the reengineering effort.
6. When my company reengineered, organizational leadership spent too much time on current processes during the reengineering effort.

7. When my company reengineered, organizational leadership had strong executive leadership commitment during the reengineering effort.
8. When my company reengineered, organizational leadership was not timid during the reengineering effort
9. When my company reengineered, organizational leadership went from a conceptual design phase right into an implementation phase during the reengineering effort.
10. When my company reengineered, organizational leadership took too long to complete its reengineering.
11. When my company reengineered, organizational leadership reengineered the whole company.
12. When my company reengineered, organizational leadership adapted a conventional implementation style during the reengineering effort.
13. When my company reengineered, organizational leadership ignored the employee concerns during the reengineering effort.

As this is a unique survey for this research, after receiving IRB approval, I conducted a pilot study of approximately 10 people from the ASQ Region 5 section 0502 community. This pilot group provided feedback on the survey, particularly how long the survey took to complete and whether the language was clear, appropriate, and easy to understand. The feedback from the pilot group allowed for the ability to test for instrument validity and reliability.

The pilot group did not provide feedback regarding the survey that required that the researcher make any changes to the survey. Because the survey did not need any changes, there was no need to resubmit the survey to IRB for re-approval. I posted the survey on the LinkedIn and ASQ groups associated with quality assurance and process improvement, and excluded the pilot survey responses in the analysis.

Data Collection Technique

The research question for this study was as follows: If nearly 80% of BPR implementations fail, then why do more than 67% of organizational leaders use BPR (Guimaraes & Paranjape, 2013; Sungau & Ndunguru, 2015)? Using the self-administered surveys, I conducted data collection in two phases. The first phase surveyed the pilot group of approximately 10 people from the ASQ community (see Appendix C). The pilot group helped to determine if the survey needed wording adjustments or additional questions, and pilot participants received the pilot survey via e-mail, with a link to the survey at SurveyMonkey.com embedded in the e-mail. The survey included a space for the pilot group to provide feedback.

I used the second phase of the data collection to collect data electronically via the web survey tool SurveyMonkey (Symonds, 2011), posting the survey to the appropriate groups on the LinkedIn and ASQ websites with a communication that (a) explained the purpose of the survey, (b) that the survey results were anonymous, and (c) that research participants could request a copy of the study. The collection of the 70 responses needed to achieve a 95% confidence level for this study (Faul et al., 2009), required visiting the

website and made additional posts requesting that members complete the survey (see Appendices D and E).

Advantages of data collection by survey include participant anonymity and potential affordability, especially when using an online survey that the researchers does not have to mail to a participant (Blackford, 2016). Disadvantages associated with self-administered surveys include non-response or low response rates (Blackford, 2016). To mitigate this, Blackford (2016) suggested designing a survey for a targeted, captive audience, which is the strategy followed for this study.

Data Analysis

The research question for this study was as follows: If nearly 80% of BPR implementations fail, then why do 87% of organizational leaders use BPR (Goksoy et al., 2012; Guimaraes & Paranjape, 2013)? The following additional research questions guided this study toward answering the overall research question:

1. Is there a statistically significant gender main effect on a linear combination of perception of BPR success factors?
2. Is there a statistically significant education main effect on a linear combination of perception of BPS success factors?
3. Is there a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors?

The hypotheses were as follows:

$H_0$1: There is not a statistically significant gender main effect on a linear combination of perception of BPR success factors.

$H_1$1: There is a statistically significant gender main effect on a linear combination of perception of BPR success factors.

$H_0$2: There is not a statistically significant education main effect on a linear combination of perception of BPR success factors.

$H_1$2: There is a statistically significant education main effect on a linear combination of perception of BPR success factors.

$H_0$3: There is not a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors.

$H_1$3: There is a statistically significant gender by education interaction effect on a linear combination of perception of BPR success factors.

Prior to analyzing the data, I had to convert the data into a usable data set and omit responses with missing data and those from participants who answered *no* to Question 7, *I have worked for a company that went through a reengineering process*. Next, numbers served to categorize the survey responses in Excel, prior to uploading the Excel document into SPSS version 21.0 for analysis. For example, all females received a number 1 and males a number 2. A research participant's education level received a numerical number associated with an education level. Participants who completed high school / trade school received a number 1 assignment. Participants who listed their education level as college / associate degree received a number 2 assignment. Participants who identified with a master degree received a number 4 assignment. Doctoral degree participants received a number 5 assignment. The participants who chose the option "prefer not to say" received a number 6 assignment. These conversions created

categorical data, which was an assumption for performing a MANOVA analysis (Chi & Muller, 2013).

To analyze the data, I conducted a two-way MANOVA using the SPSS software version 21.0 to examine the separate and combined effects of two variables (gender and education level) to determine if there was a statistically significant gender, education level, or gender by education level interaction main effect on a linear combination of perceptions of BPR success factors (Levin, 2004). To accept the hypotheses and reject the alternate hypotheses, the p-value needed to be $p > 0.05$ (Ruetzler, Taylor, & Hertzman, 2012). Using the two-way MANOVA instead of the paired *t* test helped because the paired *t* test only evaluates if the mean of the difference between the two variables is significant and the MANOVA examines the group differences on linear combinations of variables (gender by education level on each factor; Grice, 2007).

Statistical Testing Assumptions

The MANOVA analysis carries certain assumptions. For validity of the statistical test, the researcher must assess each assumption in his or her analysis and determine if the sample pool meets the assumptions and if the pool does not, be able to explain how to mitigate the assumptions. The assumptions associated with the MANOVA include (a) there being at least two dependent continuous variables, (b) the independent variables having two or more categorical independent groups, (c) independence of observations, (d) the appropriate sample size exists, (e) univariate normality exists, (f), multivariate normality exists, (g), no univariate or multivariate outliers exist, (h) a linear relationship exists between each pair of all dependent variables for all combinations of independent

variables, (i) multicollinearity does not exist, and (j) homogeneity of variance-covariance matrices exist (Grice, 2007).

This research met most assumptions. The research participant survey contained interval variables that were continuous, meeting assumption A. The independent variables met the criteria of two or more categorical groups, meeting Assumption B. The gender category consisted of the male or female options. The education category had six groups that included high school/trade school, some college/associate degree, bachelor degree, master degree, doctoral degree, and prefer not to answer. Refer to Appendix B to view the sample survey. I analyzed the data by gender and education level separately and together, meeting assumption C.

The sample size met the necessary sample size requirements using the G*Power sample size calculator (Faul et al., 2009) in alignment with assumption D (refer to Appendix A to view the sample size calculation). Assumption (e), univariate normality was not met because there was too much variation in the data (see Figures 1-22). Assumption (f) multivariate normality was not met because the *p* value was 0.0 (see Appendix F). Assumption (g) univariate and multivariate outliers were met (see Table 14). Assumption (h) was not met because multicollinearity exists (see Table 15). Lastly, assumption (i) was met because the data passed the Box's Test of Equality Covariance Matrices (see Table 16). Based upon these results, I made the decision not to transform the data or to remove outliers, and instead, to assess the data using the multivariate tests of significance, Pillai's trace, because this test is the most robust test for MANOVA

against violations of assumptions (Boslaugh, 2008), the discussion of which appears in Section 3.

Study Validity

Every research study includes validity threats, both internal and external. For research to be sound, the researcher must identify these threats and discuss how he or she will mitigate them (Teusner, 2016). The validity threats to this research included reliability of the instrument, data assumptions, and sample size. Researcher-created survey instruments, as was the case for this study, pose a threat because instrument creation can be a project in itself and researchers cannot test the instrument outside of the project (Camposs et al., 2011). Sometimes participants may fake answers based upon what they think the researcher may want to know. Using Cronbach's alpha helps mitigate this threat (Pastore & Lombardi, 2014).

Validity to the data assumptions posed the second threat to this study. I made an underlying assumption that the ASQ and LinkedIn members associated with quality assurance and process improvement groups were familiar with process improvement methodologies and BPR because of their association with the professional groups dedicated to quality. If proved inaccurate, this assumption could have influenced survey responses. However, this result was not the case.

Sample size was the last validity threat to this study. I used Faul et al.'s (2009) sample size calculator to determine the necessary sample size required for this research. Refer to the sample size calculation in Appendix A. Using this tool mitigated the threat to

sample size validity because the sample size calculator ran statistical analysis to determine the necessary sample size for this study (Faul et al., 2009).

Transition and Summary

Section 2 provided an outline of my role in planning and executing the study, a description of the participant pool as ASQ and LinkedIn members, identification of the sample size, and explanation of the use of nonprobability convenience sampling. I applied the two-way MANOVA statistical analysis. Section 2 also covered the key elements of the pilot survey and the possibility of reworking the survey questions based on feedback before placing the survey on the professional networking website, LinkedIn, and the professional organizational website ASQ. In addition, the section detailed my plan to protect the participants' rights, and adherence to the guidelines outlined in the Belmont Report (1979) by having the participants complete a consent form. Finally, Section 2 presented the data collection instruments, the survey instrument that contained 6-point Likert-type scale responses, the data organization and analysis techniques, as well as considerations related to reliability and validity. Section 3 details the application of the study to practice and the implications for positive social change.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this study was to help organizational leaders who implement BPR to understand if an individual's gender or education level influenced the perception of a successful BPR implementation. The research findings indicated that there was not a statistically significant gender main effect, education main effect, or gender by education main effect on a linear combination of perception of BPR success factors. I present the research findings in more detail in the subsequent section.

Presentation of the Findings

Descriptive Statistics

I received 201 survey responses (n = 201) for this study. Of the responses, 23 were incomplete, resulting in n = 178. Of the validated responses, 56 participants answered *no* to Question 7, *I have worked for a company that went through a reengineering process.* Elimination of the surveys containing a response of *no* to Question 6 excluded survey participants who did not have the required BPR experience. With the removed responses, 122 (n = 122) validated responses remained for analysis.

Tables 1 through 10 display the descriptive statistics for the participant's gender and educational level by perceived factor. The tables display the participants' education level separated by gender and the total number by gender and education level. Of the 122 participants, 57 were female and 65 were male. The majority of the participants had a master degree. Nine participants had a high school or trade school education level; 42 participants had a bachelor's degree; and 13 participants held a doctoral degree.

Table 1

Study Descriptive Statistics for Gender and Education by Reengineered Few Departments

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Reengineered few departments	Female	High School / Trade School	2.00	.000	4
		Bachelor Degree	2.90	1.294	20
		Master Degree	2.37	1.275	27
		Doctoral Degree	3.17	.983	6
		Total	2.61	1.236	57
	Male	High School / Trade School	1.80	.837	5
		Bachelor Degree	2.64	1.432	22
		Master Degree	2.81	1.327	31
		Doctoral Degree	2.71	1.380	7
		Total	2.66	1.338	65
	Combined	High School / Trade School	1.89	.601	9
		Bachelor Degree	2.76	1.358	42
		Master Degree	2.60	1.310	58
		Doctoral Degree	2.92	1.188	13
		Total	2.64	1.286	122

Table 2

Study Descriptive Statistics for Gender and Education for Focused Only on Processes

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Focused only on processes	Female	High School / Trade School	2.50	1.000	4
		Bachelor Degree	3.15	1.040	20
		Master Degree	2.89	1.251	27
		Doctoral Degree	2.50	1.225	6
		Total	2.91	1.154	57
	Male	High School / Trade School	2.20	.447	5
		Bachelor Degree	2.82	1.220	22
		Master Degree	3.06	1.340	31
		Doctoral Degree	2.43	.976	7
		Total	2.85	1.228	65
	Combined	High School / Trade School	2.33	.707	9
		Bachelor Degree	2.98	1.137	42
		Master Degree	2.98	1.291	58
		Doctoral Degree	2.46	1.050	13
		Total	2.88	1.189	122

Table 3

Study Descriptive Statistics for Gender and Education for Too Much Time on the Current Process

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Too much time on the current process	Female	High School / Trade School	3.00	.816	4
		Bachelor Degree	3.10	1.021	20
		Master Degree	3.41	1.047	27
		Doctoral Degree	3.50	1.049	6
		Total	3.28	1.013	57
	Male	High School / Trade School	3.00	1.225	5
		Bachelor Degree	3.05	1.214	22
		Master Degree	3.52	1.288	31
		Doctoral Degree	3.57	1.134	7
		Total	3.32	1.239	65
	Combined	High School / Trade School	3.00	1.000	9
		Bachelor Degree	3.07	1.113	42
		Master Degree	3.47	1.173	58
		Doctoral Degree	3.54	1.050	13
		Total	3.30	1.135	122

Table 4

Study Descriptive Statistics for Gender and Education for Had Strong Executive Leadership

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Had strong executive leadership	Female	High School / Trade School	2.25	1.258	4
		Bachelor Degree	2.35	1.089	20
		Master Degree	2.74	1.130	27
		Doctoral Degree	2.83	1.472	6
		Total	2.58	1.149	57
	Male	High School / Trade School	3.60	.548	5
		Bachelor Degree	2.68	1.323	22
		Master Degree	2.48	1.180	31
		Doctoral Degree	2.14	.900	7
		Total	2.60	1.196	65
	Combined	High School / Trade School	3.00	1.118	9
		Bachelor Degree	2.52	1.215	42
		Master Degree	2.60	1.154	58
		Doctoral Degree	2.46	1.198	13
		Total	2.59	1.170	122

Table 5

Study Descriptive Statistics for Gender and Education for Leadership Was Not Timid During BPR

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Leadership was timid during BPR	Female	High School / Trade School	2.50	.577	4
		Bachelor Degree	2.45	1.191	20
		Master Degree	2.93	1.072	27
		Doctoral Degree	2.33	.816	6
		Total	2.67	1.075	57
	Male	High School / Trade School	3.60	.894	5
		Bachelor Degree	2.82	1.368	22
		Master Degree	2.61	1.256	31
		Doctoral Degree	2.14	1.215	7
		Total	2.71	1.284	65
	Combined	High School / Trade School	3.11	.928	9
		Bachelor Degree	2.64	1.284	42
		Master Degree	2.76	1.174	58
		Doctoral Degree	2.23	1.013	13
		Total	2.69	1.186	122

Table 6

Study Descriptive Statistics for Gender and Education for Conceptual to Implementation Phase

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Conceptual to implementation phase	Female	High School / Trade School	2.75	1.500	4
		Bachelor Degree	3.20	1.152	20
		Master Degree	2.48	.849	27
		Doctoral Degree	2.67	1.033	6
		Total	2.77	1.053	57
	Male	High School / Trade School	2.40	.548	5
		Bachelor Degree	2.82	1.140	22
		Master Degree	2.55	1.060	31
		Doctoral Degree	2.86	.690	7
		Total	2.66	1.020	65
	Combined	High School / Trade School	2.56	1.014	9
		Bachelor Degree	3.00	1.148	42
		Master Degree	2.52	.960	58
		Doctoral Degree	2.77	.832	13
		Total	2.71	1.032	122

Table 7

Study Descriptive Statistics for Gender and Education for Leadership Took Too Long to Reengineer

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Leadership took too long to reengineer	Female	High School / Trade School	2.50	1.000	4
		Bachelor Degree	2.85	1.182	20
		Master Degree	2.85	1.099	27
		Doctoral Degree	3.50	.837	6
		Total	2.89	1.097	57
	Male	High School / Trade School	2.00	1.000	5
		Bachelor Degree	2.73	1.241	22
		Master Degree	2.87	1.204	31
		Doctoral Degree	3.00	.816	7
		Total	2.77	1.170	65
	Combined	High School / Trade School	2.22	.972	9
		Bachelor Degree	2.79	1.200	42
		Master Degree	2.86	1.146	58
		Doctoral Degree	3.23	.832	13
		Total	2.83	1.133	122

Table 8

Study Descriptive Statistics for Gender and Education for Reengineered the Whole Company

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Reengineered the whole company	Female	High School / Trade School	4.00	.000	4
		Bachelor Degree	3.45	1.050	20
		Master Degree	3.74	1.196	27
		Doctoral Degree	3.00	1.095	6
		Total	3.58	1.101	57
	Male	High School / Trade School	4.40	.894	5
		Bachelor Degree	3.86	.990	22
		Master Degree	3.42	1.409	31
		Doctoral Degree	2.86	1.215	7
		Total	3.58	1.261	65
	Combined	High School / Trade School	4.22	.667	9
		Bachelor Degree	3.67	1.028	42
		Master Degree	3.57	1.313	58
		Doctoral Degree	2.92	1.115	13
		Total	3.58	1.184	122

Table 9

Study Descriptive Statistics for Gender and Education for Adapted a Conventional Implementation Style

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Adapted a conventional implementation style	Female	High School / Trade School	3.00	.816	4
		Bachelor Degree	2.65	.875	20
		Master Degree	2.96	1.018	27
		Doctoral Degree	2.83	.983	6
		Total	2.84	.941	57
	Male	High School / Trade School	2.60	.894	5
		Bachelor Degree	2.36	1.136	22
		Master Degree	2.48	.890	31
		Doctoral Degree	3.14	.690	7
		Total	2.52	.970	65
	Combined	High School / Trade School	2.78	.833	9
		Bachelor Degree	2.50	1.018	42
		Master Degree	2.71	.973	58
		Doctoral Degree	3.00	.816	13
		Total	2.67	.966	122

Table 10

Study Descriptive Statistics for Gender and Education for Ignored Employee Concerns

Dependent Variable	Gender	Education Level	*M*	*SD*	*N*
Ignored employee concerns	Female	High School / Trade School	3.25	1.500	4
		Bachelor Degree	2.95	1.395	20
		Master Degree	3.59	1.338	27
		Doctoral Degree	2.67	1.366	6
		Total	3.25	1.379	57
	Male	High School / Trade School	3.20	1.304	5
		Bachelor Degree	3.36	1.329	22
		Master Degree	3.13	1.335	31
		Doctoral Degree	2.71	1.254	7
		Total	3.17	1.306	65
	Combined	High School / Trade School	3.22	1.302	9
		Bachelor Degree	3.17	1.360	42
		Master Degree	3.34	1.345	58
		Doctoral Degree	2.69	1.251	13
		Total	3.20	1.336	122

Cronbach's Alpha Test

A Cronbach's alpha test checked for instrument reliability, which produced a negative coefficient of -.110 (see Table 11). Because of this finding, I reverse coded negatively worded items, which included Questions 14, 16, and 19. The second Cronbach's alpha test yielded a positive coefficient of .010 (see Table 12). This data set does not have a relatively high internal consistency, which indicated that my assumptions were incorrect on the survey instrument constructs. This outcome confirmed why researchers do not often use self-created surveys (Camposs et al., 2011).

Table 11

Cronbach Alpha Reliability Statistics

Cronbach's Alpha[a]	Cronbach's Alpha Based on Standardized Items[a]	*N* of Items
-.110	-.077	10

Table 12

Cronbach Alpha Reliability Statistics: Reverse Coded Questions 14, 16, and 19

Cronbach's Alpha[a]	Cronbach's Alpha Based on Standardized Items[a]	*N* of Items
.010	-.159	10

Two-way MANOVA Evaluation of Assumptions

The two-way MANOVA assessed the main and interaction effects of gender and education level on a linear combination of BPR success factors. One independent variable was gender, with two levels, male and female. The other independent variable was education level with four levels: high school / trade school, bachelor's degree, master's degree, and doctoral degree. The statistical test assessed assumptions of univariate normality, multivariate normality, univariate and multivariate outliers, linearity, multicollinearity, and homogeneity of variance-covariance matrices. The results met four of the six assumptions. Based upon this outcome, I made the decision not to transform the data or to remove outliers and instead assessed the data using the multivariate tests of significance, Pillai's trace, because this test is the most robust test for MANOVA against violations of assumptions (Boslaugh, 2008).

Assumptions Testing

Visually examining boxplots of the data for a normal distribution served as the assessment for univariate normality. I assessed the data visually by running two sets of boxplots; one was the independent variable gender against all of the dependent variables, and the other was the independent variable of education against all of the dependent variables. A visual scanning of the boxplots showed some variation from gender and education against the dependent variables; the variation was smaller than the nonvariation (see Figures 1 and 2). The data showed reasonable distribution for purposes of this research. Howell (2007) stated that if the variance of the data appears reasonably homogeneous then there might be little to nothing gained by transforming the data.

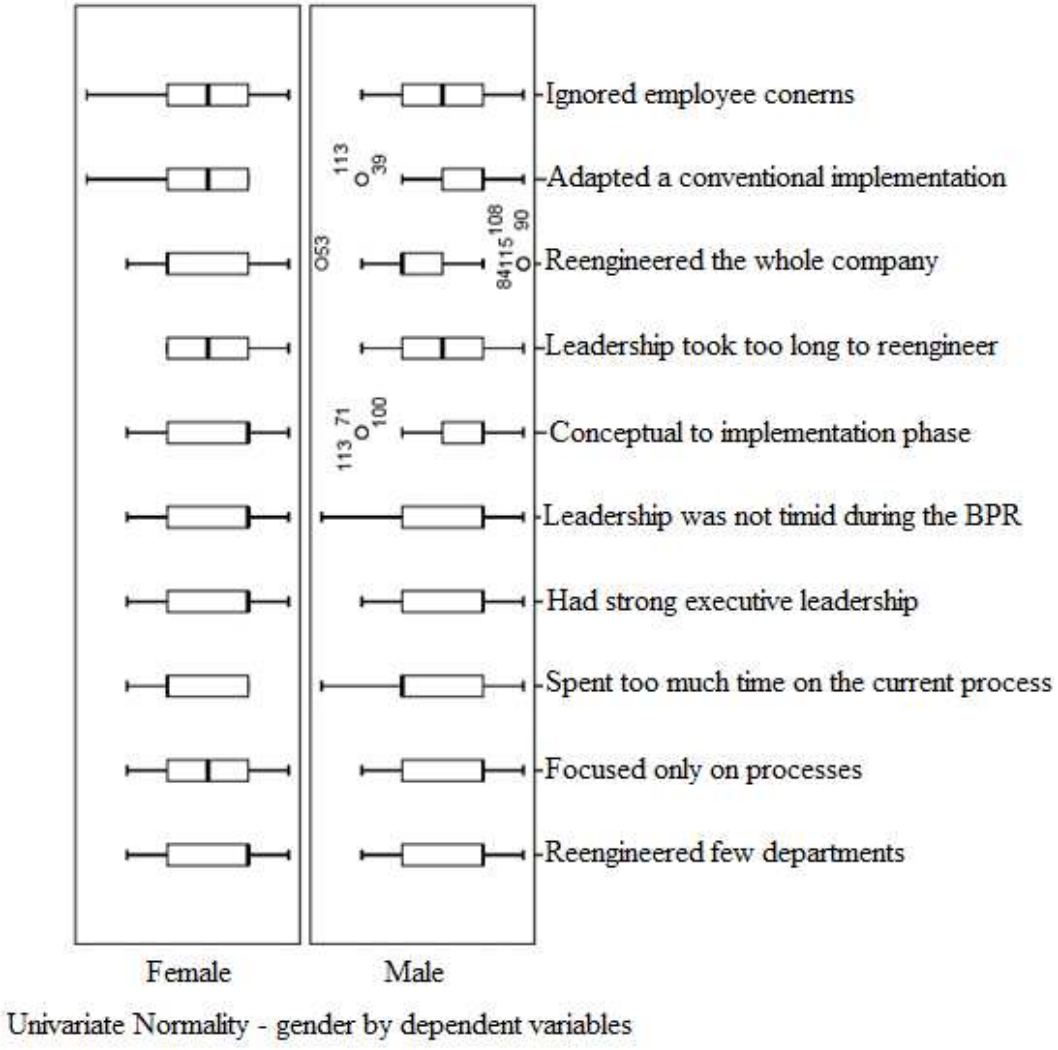

Figure 1. Univariate normality testing, boxplots for gender by dependent variables.

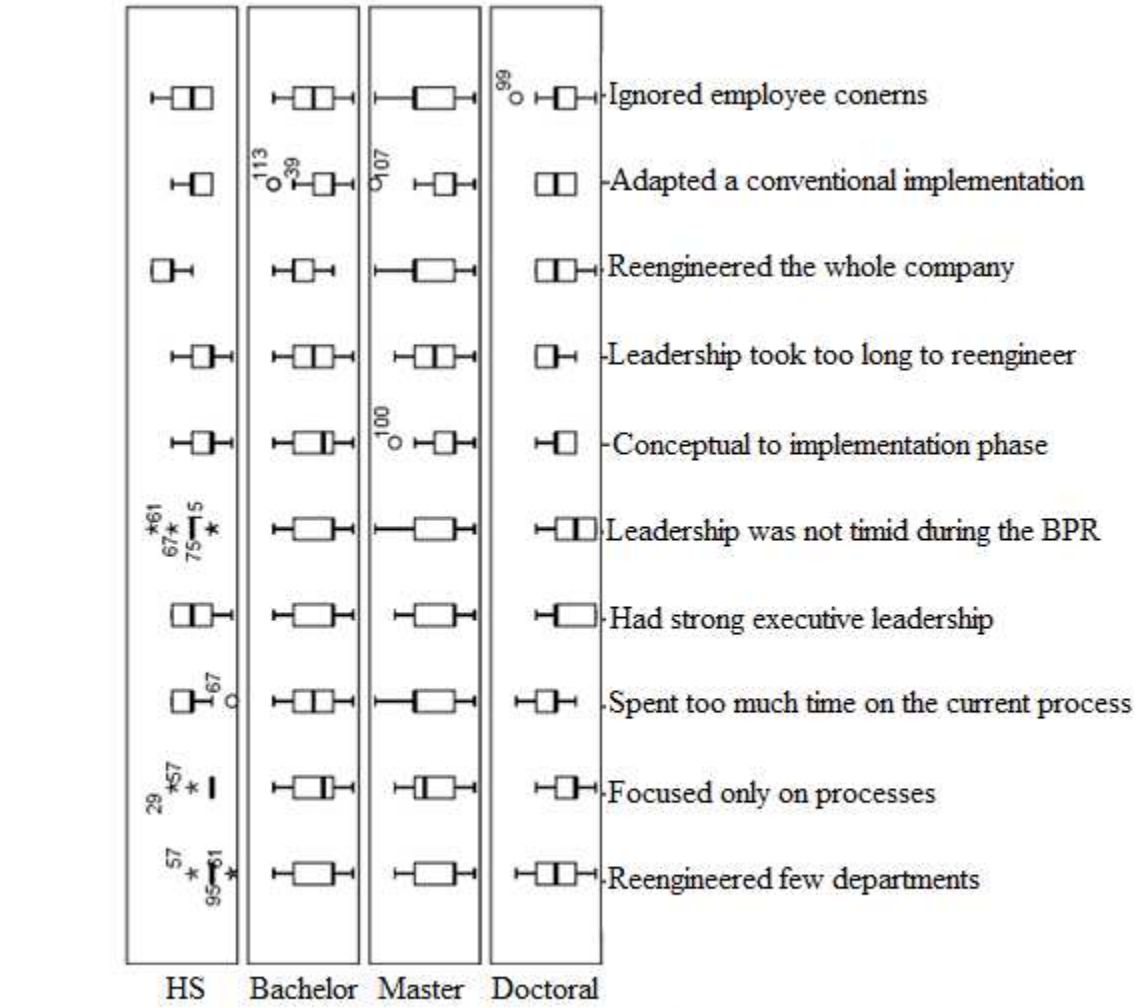

Figure 2. Univariate normality testing, boxplots for education by dependent variables.

SPSS served as the tool to test multivariate normality. Table 13 indicated that the *p*-value was 0.00 for all; therefore, this result indicated that the data set was not normally distributed (Ruetzler et al., 2012). Next, I assessed the data for univariate and multivariate outliers using Mahalanobis distances. The Mahalanobis distance was a maximum of 8.230, acceptable for analysis with 10 dependent variables (see Table 14).

Table 13

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	*p*	Statistic	df	*p*
Reengineered few departments	.330	122	.000	.827	122	.000
Focused only on processes	.261	122	.000	.861	122	.000
Too much time on current processes	.239	122	.000	.900	122	.000
Had strong executive leadership	.242	122	.000	.883	122	.000
Leadership was timid during BPR	.252	122	.000	.892	122	.000
Conceptual to implementation phase	.345	122	.000	.791	122	.000
Leadership took too long to reengineer	.227	122	.000	.871	122	.000
Reengineered the whole company	.310	122	.000	.855	122	.000
Adapted a conventional implementation	.298	122	.000	.842	122	.000
Ignored employee concerns	.216	122	.000	.901	122	.000

Table 14

Tests for Univariate and Multivariate Outliers

	Minimum	Maximum	*M*	*SD*	*N*
Mahal. Distance	1.103	8.230	1.984	1.843	122

Next, I conducted scatterplot matrices between the dependent variables to check for linearity. Based upon the results where the data moved from the lower right hand of the chart to the upper left side of the chart, I concluded that the linearity assumption was met (see Figures 3-22).

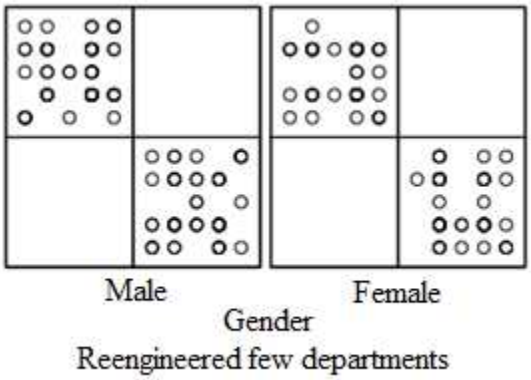

Figure 3. Scatterplot matrices for the independent variable gender by the dependent variable reengineered few departments.

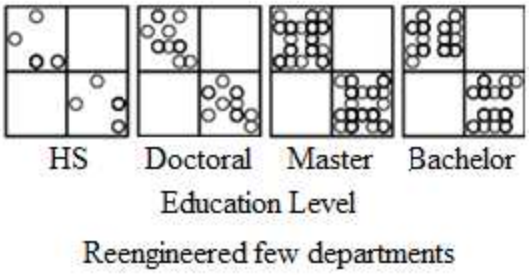

Figure 4. Scatterplot matrices for the independent variable education level by the dependent variable reengineered few departments.

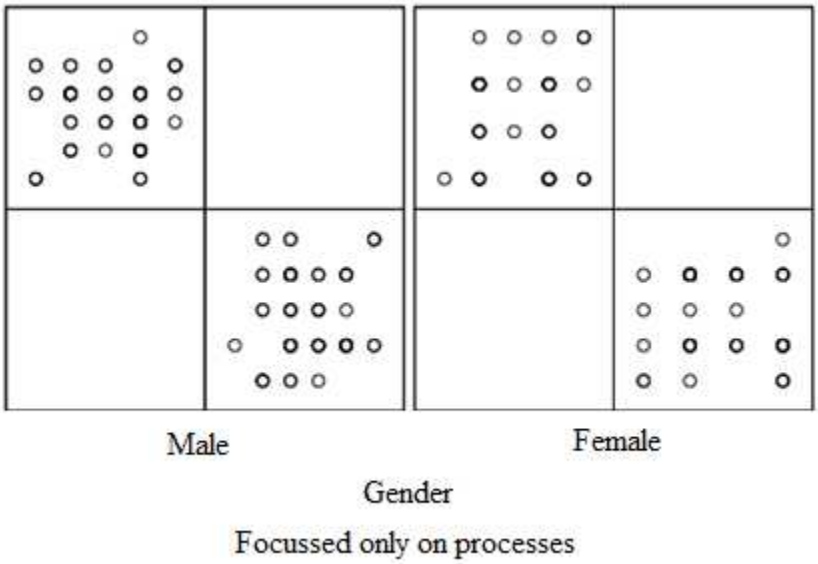

Figure 5. Scatterplot matrices for the independent variable gender by the dependent variable focused only on processes.

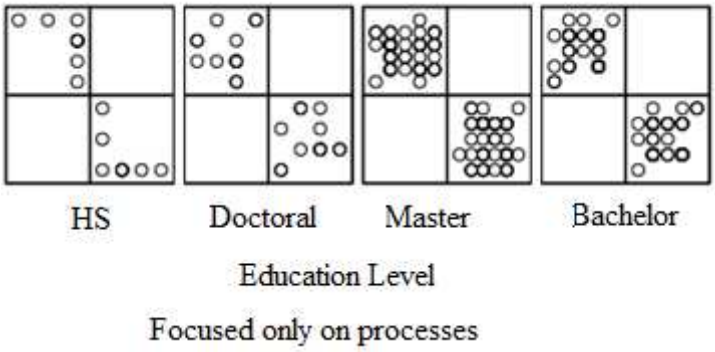

Figure 6. Scatterplot matrices for the independent variable education level by the dependent variable focused only on processes.

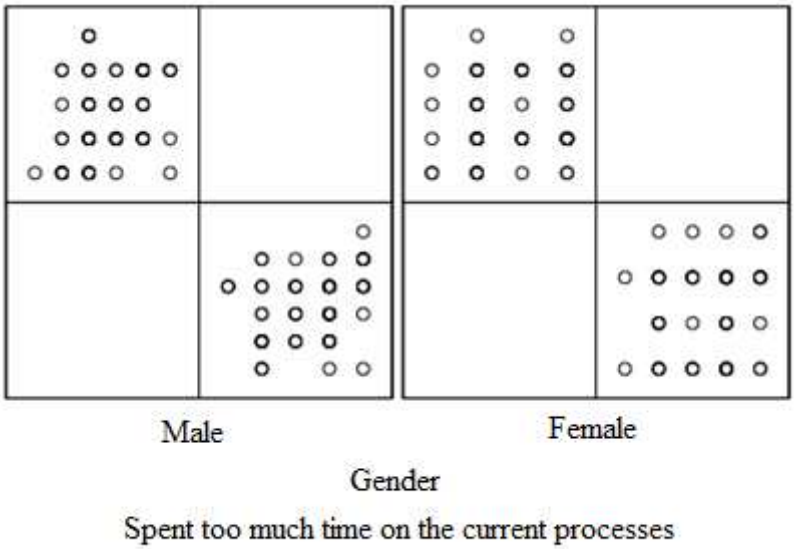

Figure 7. Scatterplot matrices for the independent variable gender by the dependent variable spent too much time on the current processes.

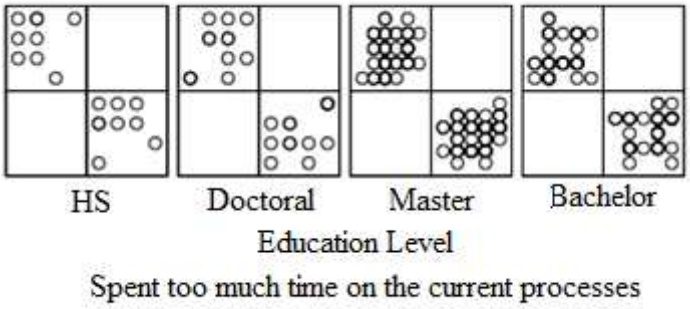

Figure 8. Scatterplot matrices for the independent variable education level by the dependent variable spent too much time on the current processes.

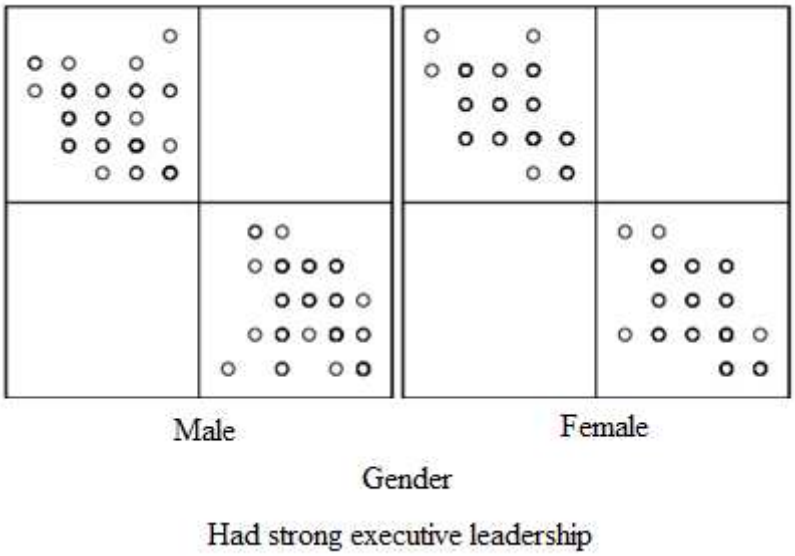

Figure 9. Scatterplot matrices for the independent variable gender by the dependent variable had strong executive leadership.

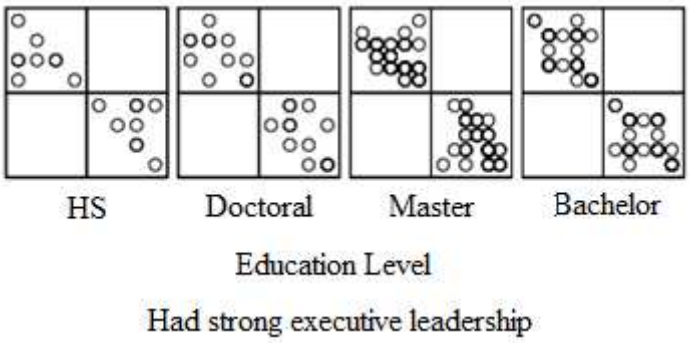

Figure 10. Scatterplot matrices for the independent variable education level by the dependent variable had strong executive leadership.

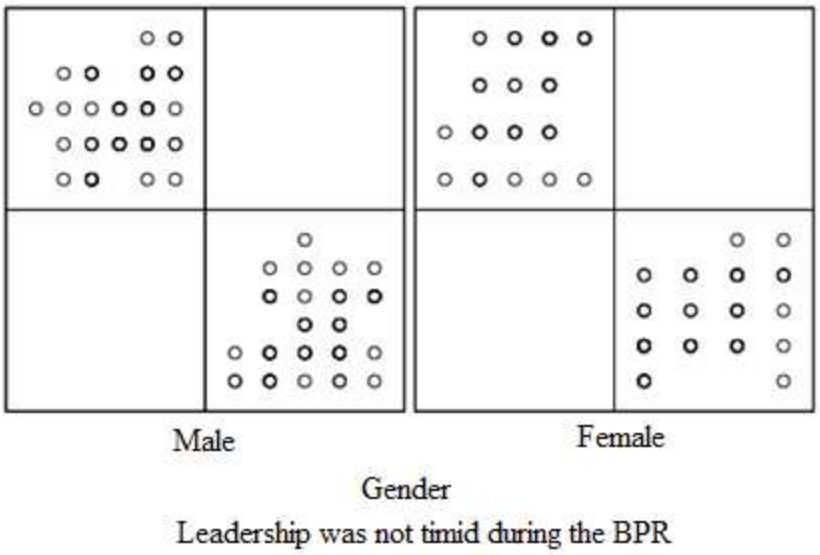

Figure 11. Scatterplot matrices for the independent variable gender by the dependent variable leadership was not timid during the BPR.

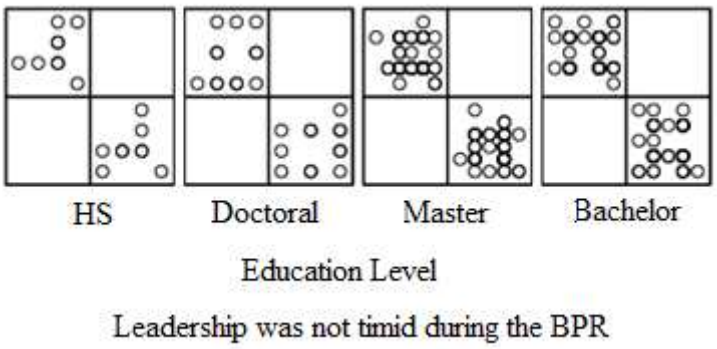

Figure 12. Scatterplot matrices for the independent variable education level by the dependent variable leadership was not timid during the BPR.

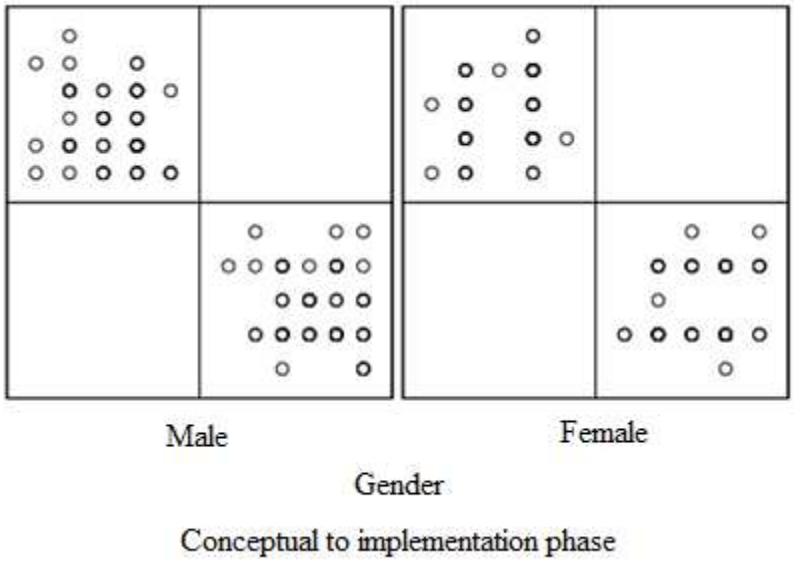

Figure 13. Scatterplot matrices for the independent variable gender by the dependent variable conceptual to implementation phase.

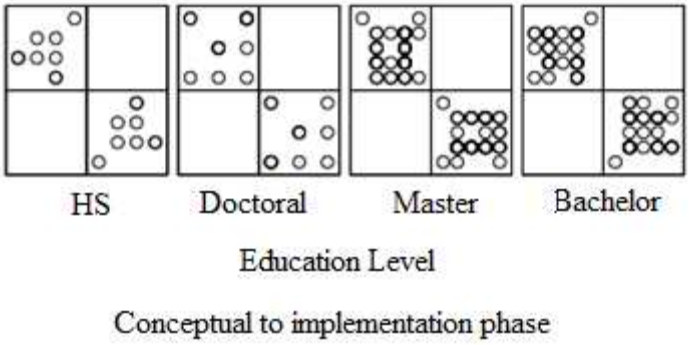

Figure 14. Scatterplot matrices for the independent variable education level by the dependent variable conceptual to implementation phase.

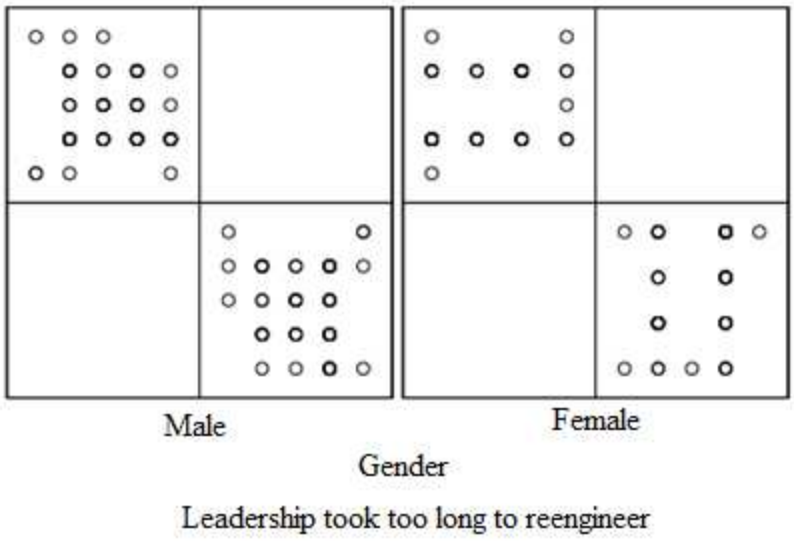

Figure 15. Scatterplot matrices for the independent variable gender by the dependent variable leadership took too long to reengineer.

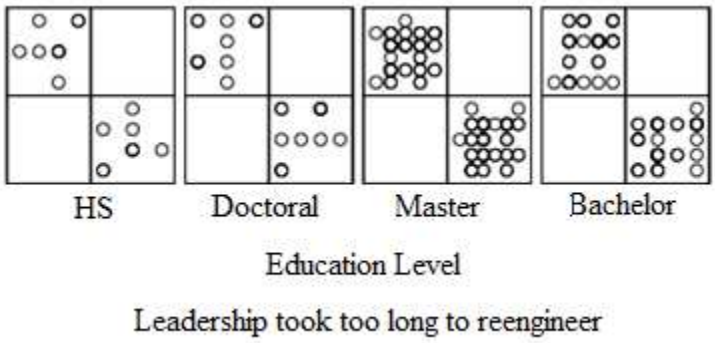

Figure 16. Scatterplot matrices for the independent variable education level by the dependent variable leadership took too long to reengineer.

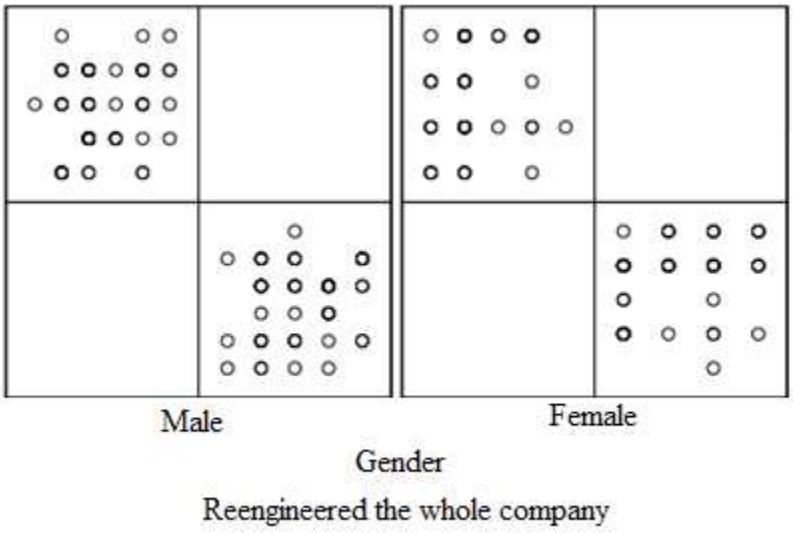

Figure 17. Scatterplot matrices for the independent variable gender by the dependent variable reengineered the whole company.

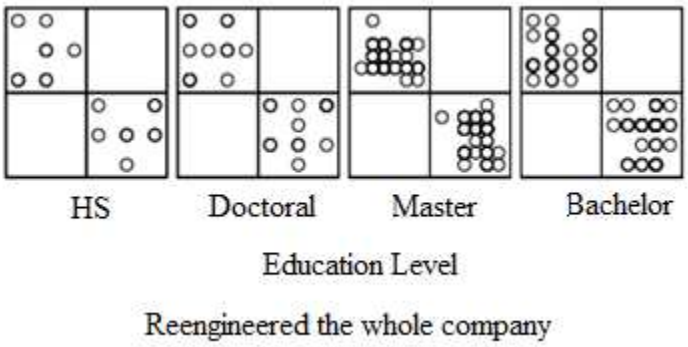

Figure 18. Scatterplot matrices for the independent variable education level by the dependent variable reengineered the whole company.

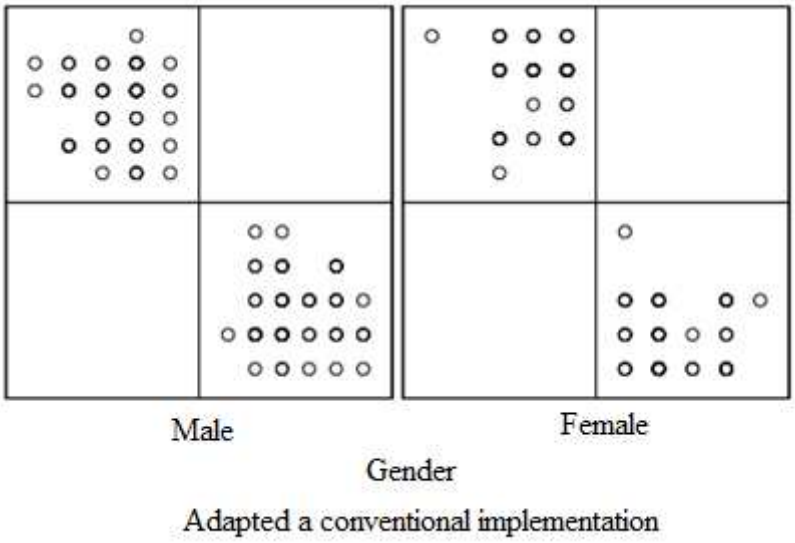

Figure 19. Scatterplot matrices for the independent variable gender by the dependent variable adapted a conventional implementation.

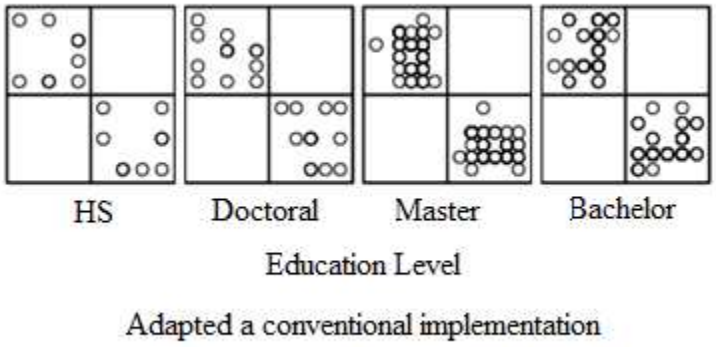

Figure 20. Scatterplot matrices for the independent variable education level by the dependent variable adapted a conventional implementation.

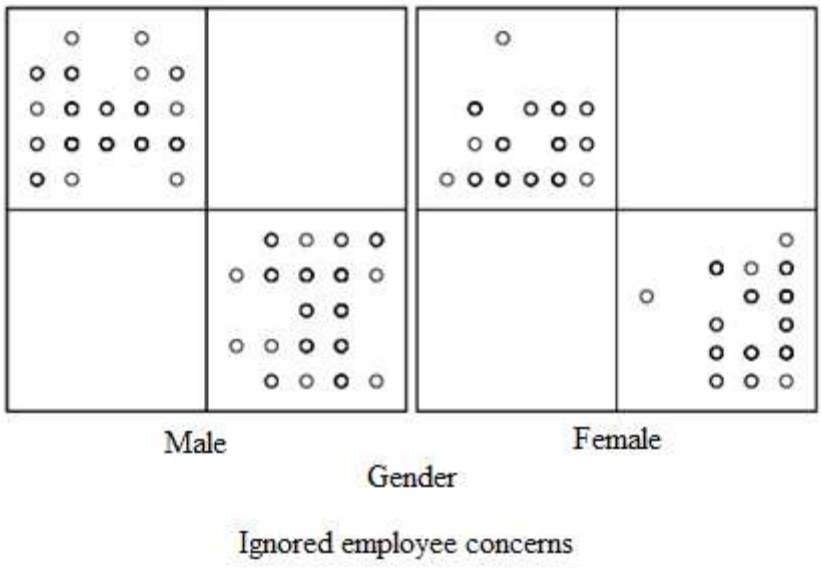

Figure 21. Scatterplot matrices for the independent variable gender by the dependent variable ignored employee concerns.

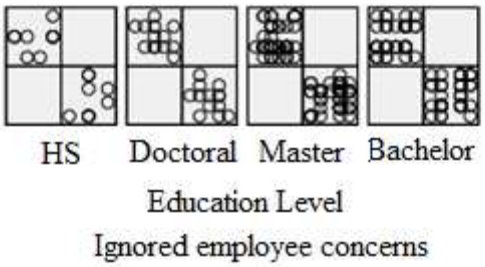

Figure 22. Scatterplot matrices for the independent variable education level by the dependent variable ignored employee concerns.

Next, I tested for multicollinearity. Multicollinearity exists in the data set because the numbers do not fall between > .2 and < .9 (see Table 15). In addition, homogeneity of variance-covariance matrices was assessed and determined to be met because the p = .775; the value surpasses the needed .005 (Tonidandel & LeBreton, 2013; see Table 16).

Table 15

Test for Multicollinearity

		Gender	Education
Gender	Pearson Correlation	1	-.003
	Sig. (1-tailed)		.488
	N	122	122
Education	Pearson Correlation	-.003	1
	Sig. (1-tailed)	.488	
	N	122	122

Table 16

Test of Variance-Covariance Matrices

Box's M	233.286
F	.922
df1	198
df2	16298.711
Sig.	.775

MANOVA Results

The MANOVA results indicated no significant gender and education interaction effect on a linear combination of perception of BPR success factors, F (33.00, 318). Pillai's Trace = .591, F (33.00, 318.00) = .591, $p > 0.05$, partial eta squared =.058 (see Appendix G). Thus, the null hypothesis was not rejected: there was no significant gender and education interaction effect on a linear combination of perception of BPR success factors. There were also no main gender and education level main effects on a linear combination of BRP success factors; therefore, the main effect null hypotheses were not rejected. There are not statistically significant gender and education main effects on a

linear combination of perception of BPR success factors. Table 17 depicts the multivariate analysis of variance for BPR success factors.

Table 17

Multivariate Analysis of Variance for BPR Success Factors

Multivariate	*F*	*p*	η^2
Gender	.764[b]	.675	.075
Education	1.217	.198	.112
Gender X Education	.591	.965	.058

Discussion

There has been little academic or professional research on the topic of BPR that was within the scope of the research presented in this study. Although I discussed BPR in the literature review, much of the BPR research did not directly align with the scope of this study; however, the literature did provide a strong baseline for discussion. Additionally, discussions included topics about participants' perception of BPR failure or success based on their demographic information including their gender and education level. These research results did not address some of the topics presented in the literature review. For example, this research did not explore how BPR influences an organization's competitive advantage and did not examine how BPR implementations increased organizational efficiency, overhead cost reduction, or increased business strength and reliability (Nadarajah & Kadir, 2014; Richard & Agwor, 2015).

When searching for quantitative studies, I found a couple of academic quantitative research studies on BPR (Bin Taher et al., 2012; Ghadim & Abdolkarimi, 2012). As such, the findings from this study added to the limited research on quantitative BPR research. Researchers examined factors that attribute to BPR success (Bin Taher et al., 2012;

Mahmoudi & Mollaei, 2014; Mariado et al., 2013). In relation to professional literature, the survey questions for this research came directly from Hammer and Stanton's (1995) statement of 10 reasons why organizational leaders fail at BPR. Previous academic research studies did not validate these reasons in one specific study. I turned those statements into research hypotheses and tested the hypotheses. The results of these research findings indicated that there was no statistical significance in a person's gender, education, or gender by education main effect on a linear combination of perception of BPR success factors as they relate to Hammer and Stanton's 10 reasons why organizational leaders fail at BPR.

As related to gender and education differences, this research both supported and negated previous research findings. Previous research found that gender sometimes influenced how a person perceived a situation or an experience as it related to power tactics and personal beliefs he or she used at work (Ganesh & Ganesh, 2014; Schwarzwald et al., 2013). Whelan-Berry (2013) found that although no statistically significant differences existed between the genders as related to change drivers, men believed that vision and change related training had more significance than women did, and women believed that that positive outcomes and communication had more significance than men did. The results of this study indicated no statistically significant differences in the way a person's gender influenced his or her perception of BPR success factors.

Lu and Betts (2011) articulated that organizations need well-educated and well-trained employees to be successful. Education, more specifically a person's business

education, indicated that that person might have more influence on a stakeholder's management (Godos-díez et al., 2015). The results of this study indicated no statistically significant differences in the way a person's education influenced his or her perception of BPR success factors.

Hammer and Hershman (2010) recommended using a cross-functional team within the organization as the group of experts when an organization starts a process design session. These experts should come from different educational backgrounds, different lengths of tenure within the company, and different ranks and titles (Hammer & Hershman, 2010). This variety ensures that those involved with BPR discuss topics from many perspectives, thus driving toward the best process design. My research findings academically supported this recommendation from the lens of the different educational backgrounds.

Applications to Professional Practice

Business leaders can apply the knowledge gained from this study to their active BPR implementations. The research results indicated that there is not a statistically significant gender, education, or gender by education main effect on a linear combination of perception of BPR success factors. Because a person's gender, education, or gender by education does not appear to have an impact on a person's perception of BPR success factors, business leaders can select employees with various gender and education backgrounds to work on the BPR implementations with confidence that a team member's gender and education level will not negatively affect the person's perception of the BPR success factors. Senichev (2013) noted diversity could increase group's performance of

solving problems. The ability to have a project team with this level of diversity may allow business leaders to increase BPR implementation success rates. Successful BPR implementations can transform the business.

Transforming the business makes a business more competitive and sustainable, and successful BPR implementation can create competitive advantages (Nadarajah & Kadir, 2014). Hammer and Hershman (2010) recommended using a cross-functional team within the organization and the experts should come from different educational backgrounds, different lengths of tenure within the company, and different ranks and titles. This variety ensures that those involved with BPR discuss topics from many perspectives, thus driving toward the best process design. The results of this study indicated that gender and education diversity support this recommendation.

Implications for Social Change

The research findings of this study contributed to social change by providing insight that a person's gender, education level, or gender by education level does not have statistical significance on a person's perceptions of BPR success. This insight is instrumental in assisting organizational leaders in understanding that these independent variables (gender and education level) do not affect perceptions of BPR success. The implications for positive social change include the potential to transform an organization, which might allow organizational leaders to have more diverse project teams leading to the success of the BPR implementations. When an organizational leader implements an improvement such as BPR, and if he or she does so successfully, the organizational leader should eventually see higher organizational profits because of the organizational

transformation as Sungau and Ndungu (2015) found in their research. Such transformation allows the organizational leaders more opportunity to reward and incentivize its current employees, to create additional jobs, pay taxes within a community, and to participate in corporate social responsibility, all of which may directly affect the quality of life in that community (Mayer & Ganahl, 2014).

Recommendations for Action

Recommendations for action include a multistep approach. Business leaders, anyone who by definition has decision-making influence in an organization, may consider reviewing this study, as the researcher's interpretation of the results showed that there is not a statistically significant gender, education level, or gender by education level main effect on a linear combination of perception of BPR success factors. Because a person's gender or education level did not appear to have a high impact on BPR success rates, business leaders can select employees with various gender and education backgrounds to work on the BPR implementations with a confidence that a team member's gender and education level will not have a negatively impact success rate of the BPR implementation. I will disseminate the research findings by publishing the study on ProQuest where other researchers and individuals may access the research findings, working with my employer for immediate discussion, and hopefully application of some, if not all, components, and by working with professional organizations, such as ASQ to discuss presenting the research at local and national ASQ meetings. Any one of these approaches will disseminate the findings to a larger community of people.

Recommendations for Further Research

Further research into the topic of BPR would benefit organizational leaders because so few academically reviewed and published articles exist on the topic. Recommendations for further research include, conducting a qualitative research study, researching through the lens of a person who has not gone through a BPR implementation, and replicating this study looking at a person's professional experience and level of BPR familiarity. Creating and testing a survey instrument is another opportunity for further research.

Conducting further research to create and test the validity of a unique survey instrument to address BRP implementation success factors will help mitigate the validity concern for further research. Some researchers believed that non-validated online survey instruments might limit the validity of research results (e.g., Campus et al., 2011). Creation of a more robust survey instrument will help create more reliable research results for future studies.

Conducting a qualitative research study on the success of BPR implementations will add to the body of academic BPR literature. For the qualitative study, the study group should be organizational leaders who made the decision to implement a BPR effort at an organization where they worked. The statements that Hammer and Stanton (1995) identified as why BPR fails should be the baseline of questions to provide more insight to why BPR fails or succeeds from a business leader viewpoint. Such research could also provide academic validation or invalidation to Hammer and Stanton's (1995) identified reasons why organizations fail at BPR.

I looked at perceptions of success factors through the lens of participants who experienced a BPR implementation. Conducing further research from the lens of people without the experience of a BPR implementation and comparing the results to this study's results may be interesting to learn if any significant differences exist between the two groups. Further research could include exploring reasons for the differences.

In this study, the null hypotheses were rejected because p-value $<.05$. The rejected hypotheses were hypotheses involving the demographic information for gender and education level. I recommend conducting a study on why gender and education level demographics influence a person's perception of BPR success more than the demographic information around a person's professional experience and level of BPR familiarity.

Reflections

While conducting the literature review and refining the problem statement of this study, I began to mentally align with the concept of BPR because of what it could do for organizations and how a good BPR implementation is the reflection of good organizational leadership. My personal bias that included believing that BPR was the best methodology an organizational leader could use to help the health of an organization. Although I had this bias, I did not influence the participants' responses to the survey or share my bias with anyone. The survey appeared on discussion groups on ASQ and LinkedIn websites, and a few participants e-mailed me questions asking how to answer the survey.

I responded to each participant encouraging him or her to answer each question honestly, and advising that there were no correct or incorrect answers. BPR is strong contender in the process improvement field; however, much work remains in the field of BRP academically, such as better preparing business leaders to implement a BPR initiative. Learning that a person's gender or education does not influence how he or she perceives a BPR outcome creates a foundation for what does not influence a successful BPR. These research results create additional questions for further research, what does influence a successful BPR implementation?

Conclusion

In Section 3, I presented the findings from the study; explained how the research findings applied to professional practice; identified how society can use the research findings for social change; and identified recommendations for action, future research, and personal reflection. Despite these findings, that no statistical significance in the perception of BPR success based upon a person's gender, education level, or gender by education level, does not mean that these categories must not, and should not, be taken into consideration when organizational leaders are planning a BPR effort. The results indicated that there is more room for research, and further questions to ask and research on BPR.

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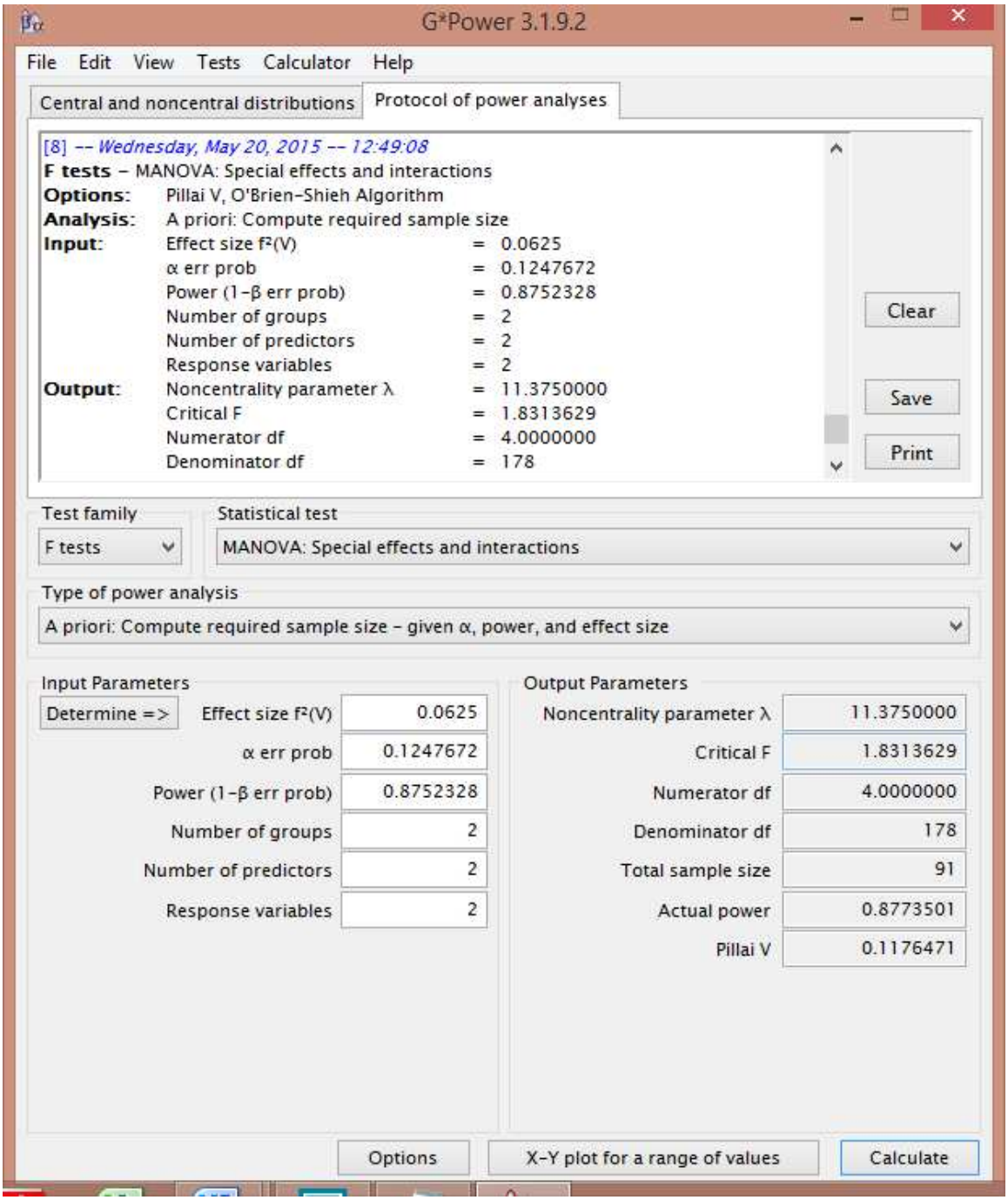
Appendix A: Sample Size Calculation



Appendix B: Sample Survey

Section 1: Participant Personal Demographics Please select the answer that best describes your personal demographics		
Q1	Consent to participate in study	1. Agree 2. Disagree
Q2	Are you male or female?	1. Female 2. Male
Q3	What is the highest level of education you have completed?	1. High School/Trade School 2. Some College/Associate Degree 3. Bachelor Degree 4. Master Degree 5. Doctoral Degree 6. Prefer Not to Answer
Q4	What best describes your level of professional experience?	1. Entry-level position 2. Manager 3. Director 4. Vice President 5. Presidency, CEO, CIO 6. Prefer Not to Answer
Q5	Which of the following best describes your level of familiarity with BPR?	1. I am an expert 2. Very familiar 3. Somewhat familiar 4. Neutral 5. No familiarity 6. Prefer Not to Answer
Q6	*Select the best answer that agrees with the statement: (y) Yes or (n) No.* I have worked for a company that went through a reengineering process If you answered *No*, the survey is complete and please submit your response now. If you answered *Yes*, please continue to Q8 in section 3.	Yes or No
Q7	Which of the following best describes	1. Finance

	the industry that you worked in where the reengineering process occurred?	2. Education 3. Manufacturing 4. Technology 5. Other – Please state 6. Prefer Not to Answer
Section 2: BPR Select the best number that best agrees with the statement: 1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree, 6=prefer not to say		
Q8.	When my company reengineered, the level of the reengineering process was successful.	1….2….3….4…5…6
Q9.	When my company reengineered, the level of the reengineering process was not successful	1….2….3….4…5…6
Q10.	When my company reengineered, organizational leadership reengineered only a department or a few departments during the reengineering effort.	1….2….3….4…5…6
Q11.	When my company reengineered, organizational leadership focused only on its processes during the reengineering effort.	1….2….3….4…5…6
Q12.	When my company reengineered, organizational leadership spent too much time on current processes during the reengineering effort.	1….2….3….4…5…6
Q13.	When my company reengineered, organizational leadership had strong executive leadership commitment during the reengineering effort.	1….2….3….4…5…6
Q14.	When my company reengineered, organizational leadership was not timid during the reengineering effort.	1….2….3….4…5…6
Q15.	When my company reengineered, organizational leadership went from a conceptual design phase right into an implementation during the reengineering effort	1….2….3….4…5…6
Q16.	When my company reengineered, organizational leadership took too long to complete its reengineering	1….2….3….4…5…6
Q17.	When my company reengineered, organizational leadership reengineered the whole company.	1….2….3….4…5…6
Q18.	When my company reengineered, organizational leadership adapted a conventional implementation style during the reengineering effort.	1….2….3….4…5…6
Q19.	When my company reengineered, organizational leadership ignored the employee concerns during the reengineering effort	1….2….3….4…5…6

Appendix C: Pilot Survey Communication

Hello,

My name is Mary Dell'Aquila, and I am a doctoral student at Walden University. As part of my degree requirements, I must complete a doctoral study. The purpose of conducting my quantitative study is to identify perceived factors as to why BPR fails and to determine if there is a statistically significant difference between the perceived factors and participant demographic information. As I prepare the survey instrument for a larger distribution, I am requesting your participation in this pilot study. As a member of the pilot group, I welcome and encourage your feedback on the clarity of all wording and the cohesiveness of the survey as a whole. The survey will take approximately 15 minutes to complete, or longer if you provide feedback. Your responses are confidential and will only be used to make the survey easier to understand.

You may complete the survey by clicking on this link: www.survey.com. Please complete the survey by [Insert date].

Thank you for time and assistance.

Appendix D: Introductory Survey Communication (E-mail and Discussion Thread)

My name is Mary Dell'Aquila, and I am a doctoral student at Walden University. As part of my degree requirements, I must complete a doctoral study. The purpose of conducting my quantitative study is to identify factors that contribute as to why BPR fails and to determine if there is a statistically significant difference between the perceived factors and participant demographic information. The survey will take approximately 15 minutes to complete. Your responses will remain anonymous.

You may complete the survey by clicking on this link: www.survey.com. Please complete the survey by [Insert date].

Thank you for time and assistance.

Appendix E: Follow Up Survey Communication (Discussion Thread)

Hello,

My name is Mary Dell'Aquila, and I am a doctoral student at Walden University. As part of my degree requirements, I must complete a doctoral study. The purpose of conducting my quantitative study is to identify factors that contribute to as to why BPR fails and to determine if there is a statistically significant difference between the perceived factors and participant demographic information. The survey will take approximately 15 minutes to complete. Your responses will remain anonymous.

There is still time to complete the survey. You may complete the survey by clicking on this link: www.survey.com. Please complete the survey by [Insert date].

Thank you for time and assistance.

Appendix F: Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Intercept	Pillai's Trace	.981	552.432[b]	10.000	105.000	.000	.981	5524.318	1.000
	Wilks' Lambda	.019	552.432[b]	10.000	105.000	.000	.981	5524.318	1.000
	Hotelling's Trace	52.613	552.432[b]	10.000	105.000	.000	.981	5524.318	1.000
	Roy's Largest Root	52.613	552.432[b]	10.000	105.000	.000	.981	5524.318	1.000
Gender	Pillai's Trace	.026	.277[b]	10.000	105.000	.985	.026	2.772	.145
	Wilks' Lambda	.974	.277[b]	10.000	105.000	.985	.026	2.772	.145
	Hotelling's Trace	.026	.277[b]	10.000	105.000	.985	.026	2.772	.145
	Roy's Largest Root	.026	.277[b]	10.000	105.000	.985	.026	2.772	.145
Education	Pillai's Trace	.306	1.215	30.000	321.000	.208	.102	36.460	.939
	Wilks' Lambda	.721	1.215	30.000	308.872	.209	.103	35.604	.931
	Hotelling's Trace	.351	1.213	30.000	311.000	.210	.105	36.385	.938
	Roy's Largest Root	.201	2.156[c]	10.000	107.000	.026	.168	21.558	.887
Gender* Education	Pillai's Trace	.158	.596	30.000	321.000	.956	.053	17.871	.576
	Wilks' Lambda	.849	.592	30.000	308.872	.958	.053	17.379	.559
	Hotelling's Trace	.171	.589	30.000	311.000	.959	.054	17.683	.569
	Roy's Largest Root	.099	1.064[c]	10.000	107.000	.397	.090	10.637	.532

Appendix G: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Corrected Model	Reengineered few departments	11.043[a]	7	1.578	.951	.470	.055	6.658	.395
	Focused only on processes	7.781[b]	7	1.112	.776	.609	.045	5.430	.322
	Too much time on current process	5.549[c]	7	.793	.602	.754	.036	4.211	.250
	Had strong executive leadership	9.618[d]	7	1.374	1.005	.432	.058	7.033	.417
	Leadership was timid with BPR	10.344[e]	7	1.478	1.054	.398	.061	7.378	.437
	Conceptual to implementation phase	7.928[f]	7	1.133	1.067	.389	.061	7.467	.443
	Leadership took too long to reengineer	7.080[g]	7	1.011	.778	.607	.046	5.443	.322
	Reengineered the whole company	13.349[h]	7	1.907	1.391	.216	.079	9.734	.569
	Adapted a conventional implementation	7.649[i]	7	1.093	1.184	.318	.068	8.286	.490
	Ignored employee concerns	9.522[j]	7	1.360	.751	.629	.044	5.260	.311

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Intercept	Reengineered few departments	449.998	1	449.998	271.301	.000	.704	271.301	1.000
	Focused only on processes	502.459	1	502.459	350.607	.000	.755	350.607	1.000
	Too much time on current process	739.307	1	739.307	561.016	.000	.831	561.016	1.000
	Had strong executive leadership	480.893	1	480.893	351.669	.000	.755	351.669	1.000
	Leadership was timid with BPR	494.703	1	494.703	352.873	.000	.756	352.873	1.000
	Conceptual to implementation phase	510.497	1	510.497	480.840	.000	.808	480.840	1.000
	Leadership took too long to reengineer	538.038	1	538.038	413.582	.000	.784	413.582	1.000
	Reengineered the whole company	893.094	1	893.094	651.261	.000	.851	651.261	1.000
	Adapted a conventional implementation	525.401	1	525.401	569.155	.000	.833	569.155	1.000
	Ignored employee concerns	668.989	1	668.989	369.580	.000	.764	369.580	1.000

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Gender	Reengineered few departments	.249	1	.249	.150	.699	.001	.150	.067
	Focused only on processes	.301	1	.301	.210	.648	.002	.210	.074
	Too much time on current process	.017	1	.017	.013	.910	.000	.013	.051
	Had strong executive leadership	.584	1	.584	.427	.515	.004	.427	.099
	Leadership was timid with BPR	1.007	1	1.007	.718	.399	.006	.718	.134
	Conceptual to implementation phase	.244	1	.244	.229	.633	.002	.229	.076
	Leadership took too long to reengineer	1.318	1	1.318	1.013	.316	.009	1.013	.170
	Reengineered the whole company	.132	1	.132	.096	.757	.001	.096	.061
	Adapted a conventional implementation	.793	1	.793	.859	.356	.007	.859	.151
	Ignored employee concerns	.003	1	.003	.002	.968	.000	.002	.050

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
	Reengineered few departments	6.876	3	2.292	1.382	.252	.035	4.145	.359
	Focused only on processes	5.724	3	1.908	1.331	.268	.034	3.994	.347
	Too much time on current process	5.193	3	1.731	1.314	.273	.033	3.941	.343
	Had strong executive leadership	1.390	3	.463	.339	.797	.009	1.017	.114
	Leadership was timid with BPR	4.285	3	1.428	1.019	.387	.026	3.056	.271
Education	Conceptual to implementation phase	6.137	3	2.046	1.927	.129	.048	5.781	.487
	Leadership took too long to reengineer	5.397	3	1.799	1.383	.252	.035	4.149	.359
	Reengineered the whole company	9.147	3	3.049	2.223	.089	.055	6.670	.551
	Adapted a conventional implementation	2.720	3	.907	.982	.404	.025	2.946	.262
	Ignored employee concerns	4.921	3	1.640	.906	.440	.023	2.719	.244

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
	Reengineered few departments	4.136	3	1.379	.831	.479	.021	2.493	.226
	Focused only on processes	1.704	3	.568	.396	.756	.010	1.189	.127
	Too much time on current process	.169	3	.056	.043	.988	.001	.128	.057
	Had strong executive leadership	7.686	3	2.562	1.874	.138	.047	5.621	.475
	Leadership was timid with BPR	5.595	3	1.865	1.330	.268	.034	3.991	.347
Gender * Education	Conceptual to implementation phase	1.645	3	.548	.516	.672	.013	1.549	.153
	Leadership took too long to reengineer	1.066	3	.355	.273	.845	.007	.820	.101
	Reengineered the whole company	3.704	3	1.235	.900	.443	.023	2.701	.242
	Adapted a conventional implementation	1.671	3	.557	.604	.614	.016	1.811	.172
	Ignored employee concerns	4.730	3	1.577	.871	.458	.022	2.613	.235

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Error	Reengineered few departments	189.088	114	1.659					
	Focused only on processes	163.375	114	1.433					
	Too much time on current process	150.229	114	1.318					
	Had strong executive leadership	155.890	114	1.367					
	Leadership was timid with BPR	159.820	114	1.402					
	Conceptual to implementation phase	121.031	114	1.062					
	Leadership took too long to reengineer	148.305	114	1.301					
	Reengineered the whole company	156.332	114	1.371					
	Adapted a conventional implementation	105.236	114	.923					
	Ignored employee concerns	206.355	114	1.810					

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Total	Reengineered few departments	1050.000	122						
	Focused only on processes	1181.000	122						
	Too much time on current process	1487.000	122						
	Had strong executive leadership	984.000	122						
	Leadership was timid with BPR	1052.000	122						
	Conceptual to implementation phase	1027.000	122						
	Leadership took too long to reengineer	1131.000	122						
	Reengineered the whole company	1735.000	122						
	Adapted a conventional implementation	984.000	122						
	Ignored employee concerns	1469.000	122						

(table continues)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[k]
Corrected Total	Reengineered few departments	200.131	121						
	Focused only on processes	171.156	121						
	Too much time on current process	155.779	121						
	Had strong executive leadership	165.508	121						
	Leadership was timid with BPR	170.164	121						
	Conceptual to implementation phase	128.959	121						
	Leadership took too long to reengineer	155.385	121						
	Reengineered the whole company	169.680	121						
	Adapted a conventional implementation	112.885	121						
	Ignored employee concerns	215.877	121						