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Strategies to Minimize the Use of Automotive Products that Contribute to Recalls

Joseph Hansen
Walden University

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Walden University

College of Management and Technology

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Joseph D. Hansen

has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

Strategies to Minimize the Use of Automotive Products that Contribute to Recalls

by

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MBA, Webster University, 2008

BGS, Missouri Southern State University, 2001

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

March 2020

Abstract

Automotive industry managers face monumental product recall situations resulting in fatalities and injuries to their customers. The recall of defective products cost an automotive manufacturer \$4.1B and an estimated \$150M compensation funds to victims. The purpose of this qualitative single case study was to explore strategies some automotive industry managers use to minimize the use of products that contribute to a product recall. The high-reliability theory was the conceptual framework for this study. Data were collected through semistructured interviews from 3 automotive industry managers in one Michigan company, a review of organizational documents, and from the company website. During data analysis using Yin's 5-step process, 3 major themes emerged: communications strategy, inspection strategy, and process strategy. The findings indicated that implementing strategies to improve communications, increase product inspections, and development of process strategies potentially increases a manager's ability to identify products that can contribute to a product recall. Managers should improve communication among stakeholders, adopt visual and digital inspection processes, and implement a process to follow all safety and regulatory directives to minimize the use of products that contribute to a product recall. The implications for positive social change include the potential for automotive managers to provide more trustworthy and dependable automobiles and increased stakeholder trust, satisfaction, and loyalty.

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Dedication

I dedicate this doctoral research to Emilee and Zackry, who despite the late nights, long weekends, and endless days supported me throughout this adventure. To my mentors, Sean, Justin, and Ken thank you for the professionalism, dedication, and tireless efforts to ensure doctoral candidates uphold the rigorous terminal degree standards. Without your input and directional motivations, I would not have succeeded. To Mike, who provided managerial guidance, experience, and knowledge, thank you for showing me the true dominance of leadership learning and challenging my leadership comprehension. To Scott and Ryan, thank you for lighting the way trailblazing a path for which I had no choice but to follow.

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Section 1: Foundation of the Study

Businesses leaders struggle to realize positive gains while simultaneously conforming to local, national, and international laws (Alavi, Cierna, & Habek, 2016). Management and delineation of ethical considerations continue materializing throughout the automotive industry, intensifying business-reduced loss prevention struggles (Boaks & Levine, 2014). A managerial challenge occurred at Volkswagen, a globally recognized automotive manufacturer (Hutton, 2015). Volkswagen is an automobile production company whose managers consciously chose to ignore Environmental Protection Agency restrictions established for diesel-burning vehicles in the United States (Hutton, 2015). The Volkswagen engineers devised software to monitor and adjust emissions performance during testing, creating fewer nitrogen oxide emissions in testing environments (Gates, Keller, Russell, & Watkins, 2016). During road tests, West Virginia University (WVU) discovered two Volkswagen vehicles produced 38 times the legal nitrogen oxide emission limits under situational conditions (Gates et al., 2016). WVUs discovery drew the California Air Resources Board to investigate the findings. Volkswagen Chief Executive Officer (CEO) Martin Winterkorn informed the world Volkswagen lost customer trust and promptly resigned (Hutton, 2015). Additionally, Volkswagen management earmarked \$7.1 billion to repair the emissions requirement defiant automobiles (Young, 2016). The Volkswagen story is an example of management strategies and ethical relationship challenges in the automotive industry, which impact brand loyalty.

Background of the Problem

Product recalls result in a negative effect on consumer brand loyalty and organizational performance (Liu & Zhang, 2017). Government organizations issued approximately 4,217 product recalls affecting organizations within the United States from 2010-2015 (Borah & Tellis, 2016). Despite repeatedly identifying product recalls as a significant business concern, organizational managers continue to experience product recalls and the resulting decline in consumer brand loyalty (Kusuma, 2015). Automotive managers who fail to avoid the use of products that contribute to a product recall experience reduced brand loyalty, profitability, and shareholder value (Bernon, Bastl, Zhang, & Johnson, 2018).

Bernon et al. (2018) called for further research regarding the effects of a product recall within the automotive industry on brand loyalty and shareholder value. Borah and Tellis (2016) recommended additional research regarding the strategies automotive managers use to manage the negative effects of product recalls as well as avoid product recalls. Eilert, Jayachandran, Kalaignanam, and Swartz (2017) noted the need for further research on the proper timing of implementing strategies to mitigate the effects of product recalls in the automotive industry. With the background of the problem provided, the focus now shifts to the problem statement.

Problem Statement

The automotive industry's monumental ignition switch recall underlined 110 fatalities, 220 injuries, and created a brand loyalty public relations challenge (Scovel, 2015). The recall of defective products cost an automotive manufacturer \$4.1B and an

estimated \$150M compensation funds to victims (Hoye, 2015). The general business problem was products that contribute to a recall negatively influence brand loyalty. The specific business problem was some automotive industry managers lack strategies to minimize the use of products that contribute to a product recall.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies some automotive industry managers use to minimize the use of products that contribute to a product recall. Data collection from three automotive industry managers from one company in southeastern Michigan provided valuable information from automotive industry focused managers. Selecting managers working in southeastern Michigan did provide case-specific, successfully implemented strategies that reduce product recall. Implications from this study may help industry managers create positive social change by creating new ways to build safer vehicles, fashion systems reducing motoring customer injuries, and design product recall strategies improving automobile industry safety standards and practices. Additionally, managers may use the findings of this study to increase employee job satisfaction, improve trust between manager and nonmanager employees. Positive social change may occur through the expanded confidence in the safety and reliability experienced by drivers.

Nature of the Study

The three research methods are qualitative, quantitative, and mixed methods (Yin, 2018). I used the qualitative methodology for this study. Researchers use the qualitative methodology to trace events over time, establishing operational linkages within a single

phenomenon (Yin, 2018). The use of the qualitative research methodology also sanctions the exploration of human behavior using open-ended questions for data collection, analysis, and interpretation (Morse, 2015). Continued exploration of the qualitative process and events provides a researcher with plentiful data, enhancing researcher data interpretation (Zamawe, 2015). Qualitative research methodology requires cultural, social, verbal, and nonverbal response data exploration (Morse, 2015). Quantitative researchers capitalize on hypothesis development and focus on testing relationships among multiple variables (Roszak, 2015). Researchers conducting a mixed-method study use quantitative and qualitative data collection methods and analysis to answer research questions (Roszak, 2015). I did not select the quantitative methodology because I was not developing hypotheses to test relationships among variables to answer the research question. Additionally, the purpose of my research was to explore strategies some automotive industry managers may use and not focus on data examination and comparison. I did not select the mixed-method approach because I was not researching the differences between multiple elements or numerical values. Combining qualitative and quantitative research methods deviates from cultural, social, verbal, and nonverbal response data exploration (Birchall, 2014).

The case study design is a means to collect comprehensive information regarding a specific topic (Thomas, 2015). Using a case study design encompasses expressive and illuminating outcomes (Yin, 2018). Researchers use the case study design to explore the how or what questions concerning genuine occurrences and explore the complex phenomenon occurring in the real-life framework (Morse, 2015). The single case study

design was appropriate for this study because I focused on how and why aspects to explore a complex phenomenon occurring in a real-world setting at one Michigan company. I considered the ethnographic research design for this doctoral research study. Researchers use the ethnographic design to focus on extensive, prolonged patterns and relationships exploring cultural aspects of organizations or groups (Yin, 2018). I did not choose the ethnographic design because I was not proposing to collect data regarding the cultural aspects of a group of people or an organization. I also considered the narrative research design for this doctoral research study. Researchers using the narrative research design employ data extraction methods from individual's life stories and focus on retold experiences to explore a phenomenon (Birchall, 2014). I was not proposing to collect data using the participants' life stories; therefore, I rejected the narrative research design.

Research Question

The overarching research question for this research was *What strategies do some automotive industry managers use to minimize the use of products that contribute to a product recall?*

Interview Questions

1. How do you define a product recall?
2. What are some of the causes for product recalls?
3. What strategies do you use to minimize the use of products that contribute to a product recall?
4. What strategies work most effectively to minimize the use of products that contribute to a product recall?

5. How do you manage suppliers to ensure their products do not cause recalls?
6. What policies or procedures do your company use to limit exposure to products leading to recalls?
7. What are the barriers to implementing strategies to minimize the use of products that contribute to a product recall?
8. How did you overcome the barriers to implementing strategies to minimize the use of products that contribute to a product recall?
9. How do employees, coworkers, and senior management contribute to limiting the use of products that contribute to recalls?
10. What additional information would you like to share about minimizing the use of products that contribute to recalls?

Conceptual Framework

The conceptual framework supporting this research was high-reliability theory. La Porte developed the high-reliability theory in 1987 to enable an organization's staff to avoid accidents in high accident-prone industries (Consolini & La Porte, 1991). The essence of the high-reliability theory is the resilient principals and quality containment procedures for an organization's staff to continue performing as a high-reliability organization (Weber, 2015). High-reliability organizations are not accident-free, but the cause analysis following the situation is obsessive (Gale, Saunders, & Sherry, 2016). Good management requires accident prevention focus and reduced loss prevention measures (Kaila, 2017). Good management also includes influencing and motivating managers actions addressing when a catastrophic failure occurs due to failed products

resulting in product recalls (Weber, 2015). Gale et al. (2016) contended the key elements to a high-reliability organizations are organization operate under specific time and pressure situations while functioning in high-risk environments. Additionally, high-reliability organizational managers use hierarchical control mechanisms establishing multiple levels of control to respond and provide feedback regarding accidents or incidents quickly (Gale et al., 2016). The high-reliability theory was an effective lens to conduct research because the automotive industry is a complex, high-risk, time focused, and catastrophic failure potential industry. Furthermore, the high-reliability theory was a structured viewpoint to explore the complexities of dynamic automotive production and recalls.

Operational Definitions

Brand loyalty: The degree to which consumers prefer a brand rather than switching to a competing brand (Cacovean & Morar, 2014).

Crisis management: The process undertaken by organizational managers to apply strategies to cope with a sudden, significant, negative event affecting the company (Bowen & Zheng, 2014).

High-reliability organization: An organization that exudes excellence regarding producing safe, reliable products through effective procedures of quality control (Sutcliffe & Weick, 2015).

Product recall: The process a company engages in to recover defective, unsafe, or poor-quality products from consumers (Bundy, 2015).

Value-based management: A management philosophy used by organizational managers to create maximum consumer and shareholder value (Beck, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Researchers presume assumptions as true statements, yet lack the means of validation at the onset of the study (Sparkes, 2015). An assumption I had was that internal office politics would not influence the participants' responses. Striving to maintain confidentiality was the mitigating technique I used to ensure participants feel protected. Another assumption was that automotive industry senior management would authorize employees for interview sessions supporting this study. Lastly, all interviews were uninterrupted, allowing the participants enough time focusing on each interview question.

Limitations

Limitations or the restrictive weakness and lack of capacity can handicap a doctoral research study (Noble & Smith, 2015). A potential limitation of this research was that all participants work in the automotive industry. A broader participant selection encompassing other automotive industry companies and members could provide a broader perspective concerning the research topic. The minimum sample size of participants was another limitation. The available number of participants limited data collection. Time limitations also influenced the doctoral research. The data collection timeframe consisted of weeks; admittedly, data collection spanning years may have increased doctoral research effectiveness.

Delimitations

Delimitations are the scholars' research boundaries, scope, and range of the research study (Marshall & Rossman, 2016). Establishing boundaries is a means for the researcher to establish control over the research study (Marshall & Rossman, 2016). The delimitations associated with my study included my establishment of guidelines or limits to the participants' responsibilities. The geographic region of southeastern Michigan was a delimitation. My intent in this study was to interview multiple managers with the studied establishment. Continued focus on managerial decisions relating to customer management processes and product recall operations preserve the research to a manageable study. I employed interviews, literature reviews, and extensive analysis of automotive industry data. External organizations data not relating to the studied establishment was beyond the scope and focus of this research study.

Significance of the Study

The significance of this study was to enhance business practice understanding and organizational strategies to minimize the use of products that contribute to a product recall. Business managers use policy, motivation, and examples of carrying out organizational governance. Governance management influences both the business practice and its social community (DeMatthews, 2018). Researching and understanding impressions from young employees to seasoned executives regarding automotive industry day-to-day operations can improve future business practices including influencing the surrounding communities and environment (Rothstein, 2015).

Contribution to Business Practice

Managers in the automotive industry may improve their business practices from gaining insight into effective strategies used to minimize the use of products that contribute to recall. Studying the managerial decisions relating to strategies minimizing the use of products contributing to product recall could fill a literature gap regarding managerial, ethics, and brand loyalty by identifying new recall strategy resolution techniques. Continuing manager and future manager education may contribute to improved business practices and efficiencies minimizing the use of products contributing to a product recall.

Elevating decisions, strategies, and cultural norms emanated by industry leading professionals may transcend the automotive industry community. Furthermore, intensifying the command environment developed before, during, and after a crisis may bridge the corporate and social apertures. Managerial comprehension provides potential prospects for improving cultural climates promoting self-worth and development. Managerial cultures define organizations and their abilities to cope with external and internal threats and opportunities (Hermanto, Nurmayanti, & Susmianto, 2018). Exploring ethical compliance and automotive industry legality adherence enlightens observers possibly creating cultural change within automotive industry managers, industrial participants, and other organizations outside the commerce (Rothstein, 2015). Furthermore, creating learning opportunities for historical reference may create additional future manager changing opportunities to reduce product recalls.

Implications for Social Change

Researching business ethics pronouncements established within a corporation may result in business networking opportunities and strengthened internal and external corporate relations (Boaks & Levine, 2014). Providing focused and transparent research concerning the causes of product recalls, managerial decisions, and product recall operations relating to business ethics may provide more trustworthy and dependable automobiles drivers strongly desire. Increased trust and decreased unethical corporate practices will enhance stakeholder satisfaction and loyalty (Bachnik & Nowacki, 2018). Increasing stakeholder trust may enhance community relations, encouraging automotive industry supporting organizations to relocate to the automobile production facility location. When additional supporting organizations relocate to the auto manufacturer's production location, the creation of new jobs potentially bolsters the local standard of living. Additionally, transportation distances of supplies between supporting organizations and the automobile producer shorten. Shortening the traveling distance between both organizations may reduce transportation energy costs and carbon emissions. Reducing the energy costs and carbon emissions may provide additional environmental saving benefits supporting the local community and potentially the world.

Social responsibility is an obligation influencing operational performance while benefiting society (Miller, 2016). Authoritative managers have an innate social responsibility to create a pro-organizational working culture supporting social change that reduces the need for product recalls and limits exposure of consumers to product failures (Capitano, Graham, & Ziegert, 2015). Focused development of product reliability

techniques may save lives. Increased awareness of automotive industry crisis management strategies may enhance social awareness concerning ethical management regarding product recall operations (Bundy, 2015). Additionally, society benefits from reduced product recall through the reduced impact on the environment less product manufacturing and less waste by making fewer products to replace failed products.

A Review of the Professional and Academic Literature

Introduction

The conceptual framework supporting this research was high-reliability theory. La Porte developed the high-reliability theory to help organizations avoid accidents in high accident-prone industries (Consolini & La Porte, 1991). Consolini and La Porte (1991) also established highly technical tasks regarding how organizational managers influence accident prevention. I focused on the high-reliability theory and addressed how managers use the theory to minimize the use of products that contribute to a product recall.

The automotive industry produces a multitude of automobiles and equipment containing moving parts numbering in the thousands. Each automobile produced can fail for a multitude of reasons including mechanical, electrical, or human error, resulting in financial damages and potentially human fatalities (Bost & Lachapelle, 2014; Gates et al., 2016). Federal hearings and several published documents emphasize a manufacturers ignition switch failure resulting in human life and financial losses (Vlasic, 2014). Although the automobile manufacturer CEO and senior managers received absolution, the failed car part resulted in manager challenges and product recalls.

The purpose of this qualitative single case study was to explore strategies some automotive industry managers use to minimize the use of procedures or materials that contribute to a product recall. Understanding the strategies minimalizing product recall will contribute to automotive industry literature gaps. Automotive industry managers also might use the findings of this study to reduce the need for product recalls.

Utilizing the high-reliability theory construct and building on previous scholars' erudition and fieldwork results in a conceptual focus, enhancing the scholarly composition of strategies and product recall strategies and operations. Furthermore, I used the qualitative case study research design to underwrite situational specific phenomenon concerning automotive industry managers lacking strategies to minimize the use of products contributing to recalls.

Using this literature review, I examined and explored minimizing strategies relating to product recalls. Employing multiple facets while establishing productive relationships provided core conceptions supporting this research. The sources used in this study are (a) 139 peer-viewed scholarly journal articles, (b) eight dissertations, (c) four government reports, (d) eight seminal books, and (e) five website references. Of the 164 sources used, 85% were peer-reviewed, and 136 had publication dates from 2015-20198, equating to 83%. Eighty-five references are unique to the literature review. The literature review organizational structure is as follows: (a) the high-reliability theory, (b) institutional theory, (c) brand loyalty and reduced loss prevention correlations in the automotive industry (d) management strategies within the automotive industry and recall

operations, and (e) avoiding the need for crises management and manager consideration in the automotive industry.

Literature Search Strategy

Scholars use literature reviews to gain insight into the conceptual frameworks used as the research lens. The purpose of a literature review is to provide exhaustive research topic details, establishing the topic foundation comprehension (Atkins, Britt, Lubke, & Paulus, 2017). The literature review was also an opportunity for me to expand the topic groundwork through literature critical analysis and synthesis. The focus of my literature review was establishing a communal understanding regarding the high-reliability theory. Additionally, automotive industry management strategies directly influencing product recall further enhance high-reliability theory relativity and comprehension.

I used multiple research techniques providing various resources supporting the research topic. The primary procedure for discovering research topic studies was a keyword search using the Walden University digital library. I also used the Walden University digital library to access multiple subject databases with varied research possibilities. The principal research databases used were Business and Management and Thoreau Multi-Database searchers. Reviewing the Counseling, Health Sciences, Nursing, and Psychology databases, I discovered supportive research topic studies and expanded research topic material acquisitions.

The procedure began with a keyword search using the Walden University library. When the search highlighted a pertinent document, I visually scanned the document

abstract for research topic relevancy. Saving the applicable documents on a local hard drive providing unimpeded access throughout the doctoral research. After initially scanning the documents for relevant information I revisited each document completing a thorough reading, annotation, and analysis. The documents passing initial and in-depth scrutiny appear in the literature review. The remaining documents provided historically and current researcher comprehension regarding high-reliability theory, management strategies, and other research studies about the research topic. The final document examination required an exhaustive reference review for each relevant document. The reference review provided insight into the scholar's research strategies and additional scholarly documents not identified by the Walden University digital library exploration.

The Walden University library was the initial literature review starting point utilizing the EBSCO Host Discovery Service and Thoreau Multi-Database Search. Additionally, I made multiple library requests, receiving professional research support from the Walden University library staff. Probing for additional scholarly documents, I exploited ProQuest Central, Science Direct, Google Scholar, and Virtual LRC. Multiple documents located on each of the websites provided additional author, conceptual framework, institutional, and research topic related to digital references. Once the digital investigation reached a culmination point, I visited two local libraries and bookstores for published resources not found digitally. The brick and mortar locations contained additional research material relating to the automotive industry and doctoral research considerations. The final location perused was the Combined Arms Research Library (CARL). The CARL staff provided additional research insights utilizing the Federal

Library and Information Center professionals. Using the CARL provided multiple federal focused court documents and automotive industry-centric research material.

High-Reliability Theory

The high-reliability theory originated from organizational research regarding naval aircraft carrier operations. La Porte, Roberts, and Rochlin (1987) started developing the high-reliability theory in 1984 when the United States Navy informally requested reliability pattern exploration during complicated technical operations. Navy management harbored concerns the continued complex, inherently hazardous, and highly technical tasks performed daily could lead to catastrophic failure, jeopardizing the military mission, equipment, or service member fatalities (La Porte et al., 1987). Continued research and refinement established an operational definition of high-reliability organizations. Organizations exuding high-reliability theory characteristics are generally complex, conduct risky operations, emanate safe and effective procedures, and continually pursue catastrophic system failure identification (Sutcliffe & Weick, 2015). Furthermore, the continued safe product or system usage providing years of continued operations personifies high reliability (Morrow, 2016). Defining high-reliability theory characteristics initiates managers' comprehension of the relationships between reliable, effective organizations and catastrophic failure avoidance. Furthermore, the conceptualization of high-reliability theory lends to highly technical task refinement increasing performance reliability. Managers focusing on lessons learned, high-reliability theory characteristics, and implementing alterations increase mission accomplishment and successful operational longevity.

Additional conversations among scholars continue redefining high-reliability theory comprehension. Pidomson (2016) contended organizations environmentally cognizant adapt internal organizational structures enhancing operational success opportunities. Understanding the operational processes and developing structural solutions inhibits fatal flaws and develops operational safety measures (Pidomson, 2016). Creating structural procedures and developing systems also promotes systems operator awareness contributing to reliable operations (Sutcliffe & Weick, 2015). Organizational managers developing internal structures demonstrate managerial decisions enriching operational effectiveness. Although system operators participate in the structural designs increasing safety measures, doing so does not guarantee a holistic approach to operational success. Continued system refinement will lower the chances of operational flaws.

High-reliability organizational managers exhibiting high-reliability theory principles establish error-free networks in an effort to achieve operational goals. Although all processes or departments may not participate in the network concept, the participating organizations strive to achieve high-reliability theory concepts (Berthod, Grothe-Hammer, & Sydow, 2015). Understandably, one or all participants failing high-reliability theory achievement jeopardizes the operational safety and some situations operational success (Sutcliffe & Weick, 2015). Unrelenting network focus, enhancing high-reliability theory concepts improving organizations network optimization and infrastructure success concerning reliable and safe operations (Berthod et al., 2015). Continued learning activities cause organizations to adjust operations, striving to achieve

safe, reliable operations. Additional concept realization is also a means for managers to contribute to network refinement aiding high-reliability organization achievement.

Previous high-reliability theory researchers declared that high-reliability organizations maintain closed systems. The established closed systems devoid of external influences providing continual error-free operations safe from failure support achieving organizational goals (Gale et al., 2016). Continued discussions also surmise the closed system operations occasionally override the organizational objectives (Gale et al., 2016). Supplementary scholarly discussions establish high-reliability organizations to avoid closed systems and repeatedly adhere to external rules, regulations, and judicial policies (La Porte, 1996). Gale et al. (2016) also established product reliability, service reliability, and reduced loss prevention influencing high-reliability organization systems. Identifying internal and external observers, establishing system overwatch, and adjusting operations to achieve overarching objectives (La Porte, 1996). Although multiple scholarly discussion identifies high-reliability organizational traits, establishing a high-reliability organization is feasible when implementing rules and regulation adherence. Additionally, understanding closed system operations that override organizational objectives can influence high-reliability operations.

Organizational managers cultivate diverse techniques for establishing high-reliability organization behaviors. Instituting huddles, communicating, and sharing experiences within the organization can influence high-reliability concepts. Provost, Lanham, Leykum, McDaniel, and Pugh (2015) reported focused gatherings or huddles concentrating on high-reliability theory concepts enhanced awareness influencing

operational reliability. Continued communications applying learned experiences supplemented with adjusted training, created additional huddle participation value (Provost et al., 2015). Although Hales (2013) suggested that the communicating high-reliability theory concepts do improve operational reliability, he also recommended the sequenced application of five high-reliability organization aspects. Sequentially implementing preoccupation with failure, reluctance to simplify, sensitivity to operations, under specification structures, and commitment to resilience aspects compliments the communication process and improves the high-reliability theory process, creating a high-reliability organization (Provost et al., 2015). Establishing huddles or intrinsic communication systems assists all participants in trying to high-reliability theory concept ingrained. Managers establishing rules or policies to enforce continued communications, sharing experiences, and laying training foundational policies can influence operational reliability and potentially impact financial strategies (Hales, 2013). Continued operational refinement using huddles also creates a learning environment improving the operational high-reliability organization processes. Through continued reflection and huddle type activities, organizations can extrapolate controls, policies, and procedures influencing product reliability and reduced loss prevention(Hales, 2013).

High hazard operations tend to be complex and cause increased safety concerns. Organizations managing nuclear asset decommissioning encounter largescale safety, environmental, and operational challenges. Gale et al. (2016) contended that nuclear-decommissioning operations inherently develop high-reliability theory concepts, expand processes increasing safety standards, and adjust high-reliability theory practices

avoiding over-rigid process obedience. Antonsen, Haavik, Hale, and Rosness (2016) suggested that Gale et al.'s findings were accurate; additionally, high-reliability organizations struggle to capture one theory or model to anticipate all failures. Continuous learning, policy adjusting, and knowledge advancement are key aspects of high-reliability theory development congealing high-reliability organization sustainment (Antonsen et al., 2016). Continuous U.S. Navy nuclear carrier group operations also contend with nuclear asset management; asserting nuclear asset management is complex and presents increasing safety concerns (Consolini & La Porte, 1991). Although Gale et al. found high-reliability theory managed organizations to continuously adjust safety standards avoiding unyielding policies, Consolini and La Porte (1991) recommended that military organizations controlling nuclear assets maintain strict obedience to structured and rigid protocols. The safety concerns permeating from high-reliability organizations establish shared policy considerations. Understanding each organization's particular operational requirements influences policy flexibility. The continued knowledge advancement is a means for different types of high-reliability organizations to develop organizational specific policies, achieving reliability through different approaches (Antonsen et al., 2016). Although one organization maintains strict policy observance and the other retains policy flexibility, both types of organizations establish high-reliability organization is obtainable through knowledge advancement. Furthermore, understanding the operational complexities of an organization's parameters contribute to adjusted high-reliability theory concepts.

Extensive literary documents provided me with in-depth information concerning high-reliability theory and normal accidents theory (NAT) relationships. Perrow (1984) reported that people interacting with complex systems or operations correlates to accident probability. Additionally, more complexity and technologically reliant organizations may increase NAT probabilities (Perrow, 1984). Although the high-reliability theory organization can exhibit NAT coinciding with complex system operations, La Porte (1996) found the multifaceted and dynamic Navy aircraft carrier crew maintained low accident rates despite complex system operations. Likewise, Antonsen et al. (2016) found that highly complex organizations maintaining closely fitting competencies maintained lower accident rates comparatively. Understanding the intricacies of NAT and high-reliability organizations provides managers with learning opportunities. Harnessing the learning opportunities contributes to manager skills development and improved operations reliability.

Maintaining accident-free operations continues to create dynamic managerial challenges. Managers understanding NAT and high-reliability organization relationships contribute to organizational goal achievement, safer operations, increased productivity, and quality products or services deliverance (Antonsen et al., 2016). Provost et al. (2015) suggested that managers fostering effective communication strategies and developing mature work cultures improve reliability statistics. Antonsen et al. (2016) reported outcomes consistent with the findings in Chien, Gossett, Mayer, Padgett, and Turner (2017) and Provost et al. quantifying cultural effectiveness and organizational policy

importance. Comprehending policies, procedures, and continued effective communications further enhance operational reliability and effectiveness.

Institutional Theory

The institutional theory developed from research concerning organizational survivability. Clegg (1981) analyzed establishments determining organizational environment and social construction influences organizational survivability, founding the institutional theory. Utilizing the institutional theory organizations must rely on environmental affects comprehension, adapting institutional operations to overcome environmental challenges (Clegg, 1981). DiMaggio and Powell (1983) expanded institutional theory and organizational survivability concepts by expanding the institutional theory defining characteristics. DiMaggio and Powell surmised institutions create, cultivate, develop, and maintain institutional legitimacy to achieve organizational compliance. Organizations also rely on three different types of pressure to maintain relevancy (DiMaggio & Powell, 1983). The three types of pressure are legal mandates, mimetic or copying successful organizational systems, and normative or professionals injected from external sources to achieve success (DiMaggio & Powell, 1983).

Scholars are continuing to refine institutional theory comprehension and organizational impacts concerning institutional survivability, adaptability, and environmental effects realization. Schilke (2018) asserted organizations developing and maintaining strong organizational identification maintain institutional theory concepts, enhancing organizational resilience concerning environmental pressures to change. Continuing utilization of organizational identity as a filter to bolster manager decision-

making processes and environmental distractor avoidance strengthens the institution's chances of remaining relevant and operational (Schilke, 2018). Gerede and Kurt (2018) presented research supporting organizational identification as a method for institutions identifying environmental effects and changing operational procedures to maintain legitimacy and survivability. Organizations also would develop new practices increasing technical efficiencies boosting institutional resiliency (Gerede & Kurt, 2018). Managers identifying and developing organizational identities create opportunities for institutional and managerial growth. Managers understanding environmental effects may also create opportunities contributing to managers developing resiliency for themselves and the organization.

The initial institutional theory development is a macro business focused theory. Biesenthal, Clegg, Mahalingam, and Sankaran (2018) concluded that megaproject managers below macro business levels employing institutional theory concepts inject cultural and cognitive strategies emulating larger organizational operations and increasing megaproject safety culture. Biesenthal et al. also contended that ethnomethodology interjection contributes to megaproject success. Cardinale (2018) reported results consistent with Biesenthal et al., contributed that the institutional pressure and structure may hinder or enable the organization. Gerede and Kurt (2018) recommended institutional pressure might influence the organizational cultural, supporting the findings of Biesenthal et al. and Cardinale. A shared understanding of the organization's cultural norms, cognitive strategies, and safety norms allows managers to be proactive and plan for success. Managers viewing operations with an institutional

theory mindset can develop operational strategies at the macro and micro business levels. Additionally, using the institutional theory framework provides established structure managers can utilize to align megaproject level operations with the macro business CEO envisioned concepts.

Corporate governance or the rules and environmental pressures influencing organizational processes are an integral part of the companies' ability to continue operations. Aguilera, Judge, and Terjesen (2018) surmised that entrepreneurial identity is the main reason for corporate governance discretion. Furthermore, organizations embracing corporate governance discretion and sociocognitive governance experience deviance from prevailing normal institutional operations (Aguilera et al., 2018). Gamage and Gooneratne (2017) found that organizations do conform to institutional norms and established entrepreneurial identity, supporting Aguilera et al.'s findings. Organizations contemplating sociocognitive governance, corporate governance, and entrepreneurial identity comprehension create opportunities for institutional resilience. Understanding the internal and external pressures created by social interjections also allows managers the opportunity to adjust daily operations regarding safety concerns, product reliability, and brand image as it relates to brand loyalty.

Institutional theory is a multifaceted philosophy managers may use to direct their organizations. Managers utilizing institutional theory respond to external pressures, internal dynamics, and cultural norms to create organizational and operational direction. Gamage and Gooneratne (2017) found that key managers utilize customer driven or external pressures to develop an institutional culture and business practice achieve

organizational success. Additionally, managers focusing on internal dynamics, head-office pressures, and established internal controls contribute to organizations contributes to organizational success and legitimacy (Gamage & Gooneratne, 2017). Agyekum and Singh (2018) reported results consistent with the findings of Gamage and Gooneratne. Furthermore, advancements in technology influence the management process and requiring changes to formal structures and cultures adapting to the newer automated environment (Agyekum & Singh, 2018). Managers understanding the institutional theory can utilize external pressures, internal pressures, and cultural norms within the organization to establish new norms and operational processes. Additionally, incorporating technology adds another aspect to institutional theory in that successful managers need to be proficient in a multitude of business functions.

Managers applying the institutional theory should utilize a holistic approach to management. Cornelissen, Durand, Fiss, Lammers, and Vaara (2015) contended communication is the most critical aspect of institutional theory application success. Institutionalizing communication norms contributes to performative measures resolving operational process ambiguity (Cornelissen et al., 2015). O'Connor, Parcha, and Tulibaski (2017) found that communication influences the institutional theory process. More specifically, utilizing communication practices specifically orientated towards the organization's industry norms enhances institutional understanding, culture development, and employee comprehension (O'Connor et al., 2017). Developing, understanding, and institutionalizing communication processes, expectations, and values may contribute to

managers positively influencing daily operations. Managers contributing their learned communications experiences may enhance organizational performance.

Few literary documents provide in-depth information regarding the institutional theory and high-reliability theory. Sutcliffe and Weick (2015) established the high-reliability theory characteristics as managers identifying complex operations, risky operations, and continually identifying critical points of failure. Although managers capitalizing on the institutional theory concepts may have complex or risky operations, their primary focus is the organizational environment and social constructions within the institution (Clegg, 1981). Another concept separating the two theories is the establishment of error-free operations. Berthod et al. (2015) established that organizational managers focusing on high-reliability theory concepts strive to establish error-free operations to achieve operational goals and success. Schilke (2018) recommends a different approach. Fully comprehending organizational identification and external distractor avoidance are key to achieving operational goals and success (Schilke, 2018).

Both institutional theory and high-reliability theory practitioners focus on organizational survivability. DiMaggio and Powell (1983) contended survivability is a defining characteristic of institutional theory in support of La Porte et al.'s (1987) recommendation that survivability and safety are paramount to organizational success. Another defining characteristic of institutional theory and high-reliability theory is managers developing operational norms based on environmental influences. Managers understanding the operational impacts of external and internal influences can develop,

modify, or adjust organizational processes to achieve greater success (Pidomson, 2016). DiMaggio and Powell (1983) reported results supporting Pidomson's (2016) findings and suggested the three most influential pressures are legal, mimetic organizational systems, and external professional influences. Alternatively, communication is an interracial component of institutional theory and high-reliability theory processes. Provost et al. (2015) found communicating organizational requirements, goals, and expectations improve operation success. Cornelissen et al. (2015) described effective communication processes as essential aspects of operational success confirming Provost et al.'s findings. Managers institutionalizing communication processes enhance operational success and contribute to institutional culture development (O'Connor et al., 2017).

The institutional theory mirrors several concepts of the high-reliability theory. The primary difference is the high-reliability theory practice is the focus on institutions operating within an inherently hazardous environment and conducting technically focused tasks. The automotive industry continues developing technologically advanced products and requiring employees to work in a hazardous environment. Utilizing the high-reliability theory aligns with automotive industry hazardous and technically focused operations and thus my reasoning for its selection.

Brand Loyalty

Customer perceived value is a critical aspect of brand loyalty. Understanding customer wants, needs, and desires permit automotive industry executives decision-making opportunities to achieve customer faithfulness and trust. Matthews, Junghwa, and Watchravesrignkan (2014) supported Cacovean and Morar's (2014) conclusions,

additionally asserting that customer needs focused achievements and successful brand satisfaction relationships contribute to brand loyalty. Continued understanding of the patrons' value orientation and adjusting business models meeting customer viewpoints lends to enhanced loyalty (Cacovean & Morar, 2014; Heavey, Ledwith, & Murphy, 2014). Matthews et al. (2014) supported Cacovean and Morar's conclusions, asserting managers and marketers improve brand loyalty by meeting customers' needs and building successful customer relationships. Van der Westhuizen (2018) reported results consistent with Matthews et al. in that unremitting focus on customer perceived value allows organizations to build a collaborative customer and brand loyalty environment. Achieving brand loyalty is a daunting task. Developing learning organizations, capturing the knowledge generated from brand satisfaction understandings, production line, services information, and business model scrutinization are means for managers to create opportunities to enhance brand loyalty. Through continued observations, managers can understand brand loyalty experiences through consumer feedback.

Emotional value results in improved brand loyalty and customer satisfaction. Developing products, materials, and services addressing consumer emotional values fosters long-term commitments; providing additional reasons consumers purchase goods and services from businesses (Matthews et al., 2014). Matthews et al. (2014) described emotional value as a brand loyalty critical aspect, establishing results consistent with Hussein's (2018) published research. Additionally, understanding how the customer experiences the purchasing process relating to emotional value creates supplementary brand loyalty opportunities (Hussein, 2018). Industry managers are examining emotional

value principals understanding emotional values change over time influencing brand loyalty relating to loyalty change (Dawes, Driesener, & Meyer-Waarden, 2015).

Capitalizing on the emotional value trends regarding brand loyalty causes astute industry managers to develop creative methods for brand loyalty retention. Implementing creative methods also establishes a unique connection between customers and the organization. Industry professionals gain an understanding of customers' emotional values and create metacognition development opportunities. The continued understanding and development of customer and industry emotional value comprehension will continue increasing brand loyalty and improve reduced loss prevention opportunities (Bagozzi, Cha, & Yi, 2015).

Trusting brands or organizations is an important brand loyalty component.

Likewise, e-loyalty capitalizing on web-based technologies gaining customer favoritism works tandemly with trusting organizational performance (Aslam et al., 2015). Van der Westhuizen (2018), reporting results consistent with the findings of Aslam et al. (2015), contending trust fostered through brand loyalty is not the only factor in attracting customers. Marketers who develop brand loyalty and trust can potentially lose consumers if competitors provide the same or a perceived superior value product cheaper (van der Westhuizen, 2018). Brand loyalty and trust factors do contribute to customer satisfaction and repeat procuring. The loss of trust either locally or through e-commerce negatively influences brand loyalty and potential revenue. Furthermore, consumers perceiving the organization as dismissive or engaging in the avoidance of legal obligations erodes the consumers trust influencing brand loyalty (He & Lai, 2014). Managing customer expectations regarding trust can influence brand loyalty. Organizational managers

understanding brand loyalty and e-loyalty are mutually compatible and potentially create opportunities to cultivate loyal customers purchasing from brick and mortar locations and through web-based technologies (van der Westhuizen, 2018). Customers who trust the organization will continue purchasing from the trusted organization even if the competitors provide similar products. Understanding factors leading to trust allows organizational managers to extract comprehensive brand loyalty, e-loyalty expectations, and develop operational strategies to continue gaining customer brand loyalty through trust.

Consumers view brand loyalty with different values, expectations, and concepts. Customer perceived status enhancement contributes to brand loyalty establishing product value (Piong, 2014). Identifying and recognizing specific product brands enhancing personal status also affect brand involvement swaying acceptance and effecting business product marketing strategies (Piong, 2014). Cacovean and Morar (2014) found that understanding customers' value perceptions do contribute to brand loyalty supporting Piong's (2014) findings. Also, the continued development of higher valued products effects business models establishing an organizational commitment to exceeding perceived values (Cacovean & Morar, 2014). Van der Westhuizen (2018) also found influencing customer perceived value enhances brand loyalty and engaging consumers attempting to build lasting friendships further develops business friendships. Developing friendships with a world-renowned multifaceted organization, can provide enhanced status perceptions (Van der Westhuizen, 2018). Understanding customer perceived values relating to enhanced personal status provides organizations foundational data creating

opportunities safeguarding loyal customers (Van der Westhuizen, 2018). Retaining loyal customers will sway product reduced loss prevention while simultaneously providing consumer perceived status enhancement (Van der Westhuizen, 2018). Although organizations capture data regarding perceived status enhancement, marketing strategies refinement, and business model adjustments, relentless refinement of all operational functions including these concepts requires a continued understanding of consumers' values, expectations, and concepts.

Corporate social responsibility (CSR) continually affects brand loyalty. Customers' perceptions of a company's CSR initiatives affect consumers' brand loyalty tendencies (He & Lai, 2014). Moreover, the symbolic images connecting ethically responsible organizations to ethically responsible actions increase consumers' product value perceptions while influencing brand loyalty (He & Lai, 2014). Consumers participating in CSR contribute to personal and social brand identification that influences loyalty formation (Bagozzi et al., 2015). Ali, Alwi, and Nguyen (2017) conveyed results consistent with He and Lai (2014) and Bagozzi et al. (2015). Likewise, product quality contributes to ethical branding, influences brand loyalty, and company reputation (Ali et al., 2017). Providing additional findings, Ali et al. established ethical branding as a critical function; emotional value contributes to corporate responsibility and effective reputation management. Establishments supporting CSR tend to continue providing organizations the opportunity to earn consumers and brand loyalty. Establishments utilizing ethically responsible actions also increase consumers perceived worth linking social brand identification, company reputation, and ethical branding (He & Lai, 2014).

Not only does ethical actions result in improved consumer trust, but also heightens brand loyalty initiatives. Consumers recognizing organizational CSR develop lasting trust and share their experiences with friends, family, and other constituents. The continued perception of value solidifies those experiences contributing to perceived CSR and enhances brand loyalty (Ali et al., 2017). The continued shoring of brand loyalty also creates shared experiences supporting specific organizations within an industry (Ali et al., 2017).

Happiness, excitement, and passion emotions can optimistically influence brand loyalty. Although these emotions relate positive feelings, fear is another emotion that can enhance brand loyalty (Dunn & Hoegg, 2014). Dunn and Hoegg (2014) contended, despite fear of being a negatively viewed emotion, the presence of fear may be a positive influencer when other negatively viewed brands are absent. Although Dunn and Hoegg suggested fear positively influences brand loyalty, Cacovean and Morar (2014) recommended happiness, excitement, and passion emotions positively heighten brand loyalty. Additionally, creating positive emotional reactions contributes to trust building; allowing consumers greater brand loyalty opportunities (Haijun, 2014). Comprehending the emotional impact surrounding brand loyalty creates opportunities to augment organizations' marketing strategies. Not only will organizational managers be able to construct marketing or advertising agendas, but they also can contribute to enhanced revenue related policies and procedures. Furthermore, utilizing the knowledge gained through empirical data may provide companies with a business advantage over competitors. Capturing the emotional stimulations relating to specific models,

accessories, colors, and safety features also create an operational foundation. Continued monitoring and adjusting production influenced by emotional comprehension also create additional data relating to unwanted products and product reliability (Bagozzi et al., 2015).

Management

Understanding operational impacts regarding cost management enhance operational success. Cost management focus influences operational costs and contributes to managers establishing quality products while maintaining reduced loss prevention (Schiff, 2014). The continued cost management rationalization process includes material and personnel costs. Overtime or temporary labor shortages impact reduced loss prevention demonstrating a cost managerial focus malfunction (Auf, Aman, Majid, Meddour, & Rosli, 2016). Failed material quality examination processes also contribute to reduced loss prevention. Creating superfluous product reworks, recalls, and lost production hours correcting material flaws can outline cost managerial focus relevance. Additionally, maintaining the status quo concerning cost managerial decisions jeopardizes operations, safety, and the organization's livelihood (Schiff, 2014). Porporato (2016), Azman, Fuzi, Habidin, Latip, and Salleh (2016), and Boaks and Levine (2014) found that managers influence reduced loss prevention, and maintaining cost effectiveness permits reduced loss prevention, consumer positivity, employee satisfaction, and increased future operations. Likewise, Porporato (2016) and Chien et al., (2017) recommended establishing systems double checking quality, linking cost-effective measures and organizational performance enhances cost managerial enabling strategic

objective attainment. Porporato (2016) further added implementing lean six sigma performance improvements integrates strategic controls and cost managerial principles (LSSPI). Maintaining that companies capitalizing on the LSSPI tool to increase product quality while simultaneously lowering product quality defects (Porporato, 2016), Organizations comprehending cost management influences allows for increased reduced loss prevention opportunities. Although not all cost managerial decisions translate into reduced loss prevention, constructivism learning regarding cost management conclusions provides managers with opportunities to enhance operational success.

Senior level managers have a responsibility to ensure all operations adhere to legal, ethical, and moral obligations. Corporate actions adhering to these tenets are establishing manager responsibility contributing to stakeholder approbation (He & Lai, 2014). Furthermore, championing local communities through environmental destruction avoidance further supports responsible management (Siegel, 2015). Bagozzi et al. (2015) conveyed customers participating in organizations' social responsibility campaigns strengthen the customer's loyalty to the responsible organization. Ali et al. (2017) and Pryor, Sewell, and Taneja (2012) found that establishing responsible management does contribute to stakeholder approbation supporting the findings of Bagozzi et al., He and Lai (2014), and Siegel (2015). Likewise, Siegel maintained responsible manager activity manipulates stakeholder perceptions of the individual manager. Additionally, positive or negative actions affect promotions and career advancement (Siegel, 2015). Engaged stakeholders support organizations exhibiting responsible management. Organizational managers attuned to stakeholder awareness should consider responsible management is a

multifaceted manager initiative. Upper management acclimatized to laws, regulations, ethical, moral guidelines, and stakeholder expectations can develop institutional policies aligning with these requirements. Likewise, comprehending the multifaceted manager initiative is a team effort consisting of the organization and individual undertaking. The individual actions do play a part in the organization's responsible management platform. If either the individual or organization fails to achieve or exceed stakeholder expectations, the organization loses stakeholder commitment.

Value-based management creates dilemmas among managers and stakeholders. The continued value-based corporate mindset requires senior manager indoctrination, implementation, and management of value-based management (Beck, 2014). Maintaining a foundation of value-based management helps create trust between corporate managers and stakeholders. The dilemma occurs when value-based decisions do not align with stakeholders interests creating management dilemmas (Beck, 2014). Managers making unethical decisions to meet stakeholder requirements have a negative impact on organizational performance. DeMatthews (2018) and He and Lai (2014) reported results consistent with Beck's (2014) analysis. Additionally, value-based management is a process requiring written and verbal application to be effective (Heavey et al., 2014). Managers must exemplify value-based management publically and privately ensuring employees and stakeholders internalize the organization's commitment to excellence (DeMatthews, 2018).

Manager behavior since 2007 reflects value-based management situations. The failures at Enron, Bear Sterns, Hurricane Katrina relief, and Bernie Madoff's Ponzi

schemes cost organizations and stakeholders billions of dollars. Organizations embracing value-based management programs not only develop employees value comprehension they also foster cultures designed to avoid past failures. Furthermore, continued knowledge attainment conditions employees to support value-based decisions even when those decisions countermand stakeholder requirements. Establishing written value-based policies and procedures does not guarantee employees will also make the best value-based decision, but established policies may provide a foundational understanding all employees can access. Ultimately value-based organizations provide the tools managers and employees can utilize enhancing the decision-making process. Although cost management, social responsibility, and value-based management provide managers the framework for managing employees, they do clearly address sustainable management considerations. The sustainable managerial model pertains to context, consciousness, continuity, connected, creative, and collective or predominantly known as the 6C-model encourages managers to focus on short and long-term objectives (Arts, 2013). The sustainable managerial concept requires managers' focus on sustainable management consciousness and continuity principles achieving sustainable business transformation (Arts, 2013). Arts (2013) also identified maintaining creativity cruciality for sustainable business success. While Schiff (2014) suggested sustainable management concepts aligning with Arts' sustainable management principles, Dalati, Davidaviciene, and Raudeliuniene (2017) recommended a different methodology. Building organizational trust and job satisfaction are arguably critical to sustainable management (Dalati et al., 2017). Adopting sustainable management allows organizations continuity and

uninterrupted managerial opportunities. Decreasing turbulence in manager positions also creates a foundational trust environment and establishes a cultural atmosphere all stakeholders appreciate. Furthermore, organizations embracing sustainable management concepts can develop future managers within the organization creating a competitive managerial advantage. Maintaining a competitive management advantage can lead to increased organizational growth and reduced loss prevention.

Transformational management is an integral part of organizational longevity. Although some transformations fail, appropriate management does influence positive operational change success (Kotter, 2014). Transformational managers continuing change implementation also contribute to financial prosperity (Kotter, 2014). Kotter's (2014) transformational management concepts resonate in the business community. Hughes (2015) published results consistent with Kotter's findings. Adding to Kotter's unprecedented change concepts, Hughes (2015) reported the transformational change within an organization increases moral and ethical management. Likewise, Scherzinger and Schumacher (2016) suggested that gradual change implementation coupled with change agents or individuals inside or outside the organization facilitating change increasing transformational change acceptance. The business environment is dynamic and always changing based on internal and external stimuli. Organizations incorporating transformational management changes create distinct competitive advantages. Furthermore, managers comprehending organizational change requirements create growth, mentorship, and managerial development opportunities. Continued change

requirement observations also establish manager credibility and expertise, aligning with Kotter's transformational essential components.

Avoiding the Need for Crisis Management

Crisis management can be taxing. Unexpected system failures create rapidly developing scenarios when instant assessment, rapid decisions, and potentially threatening circumstances occur in an uncertain environment. Vitaly important, automotive industry manufacturers maintain crisis management programs however each program is different. Timely and accurate communication is paramount during crisis management activities (Aggarwal, Jindal, & Laveena, 2015). Failed timely and accurate communication during a crisis management situation generates false situational awareness and faulty operational responses (Aggarwal et al., 2015). Additionally, failing to achieve timely and accurate communication, false situational awareness, and faulty operational responses leads to unclearly crisis definition or identification complicating crisis management operations (Aggarwal et al., 2015). Bowen and Zheng (2014) found that communication is the central element to crisis management effectiveness. Furthermore, effective communication assists organizations in the development of crisis management strategies (Bowen & Zheng, 2014). Although crisis management communications lead to crisis situational awareness, not all crisis management communications are negative. Specific operations relating to the crisis can receive upgrades. Advancing outdated systems, technologies, or operations will increase operational effectiveness based on crisis management lessons learned (Sass & Szalavetz, 2013). Likewise, upgrading strengthens the organizations' position within their

perspective industry (Sass & Szalavetz, 2013). Individual organizations capturing and learning from crisis management communications successes and failures also create opportunities to upgrade their crisis management plans. Maintaining updated crisis management plans establishes the framework for communicating internally and externally during crisis situations. Furthermore, communicating accurately the crisis can contribute to ethical and credible manager responsibility.

Crisis management communications influence internal and external perceptions regarding the organization's functionality. Journalist publications influence public perception of crisis management situations affecting crisis recovery and ultimately influencing reduced loss prevention (Cho & Hong, 2016). Understanding consumers' expectations and reactions based on crisis management publications provide organizations the opportunity to inspire consumers purchasing goods and services (Mansor & Nasir, 2017). Although publishing crisis events influence public perceptions, organization managers can control the information provided (Aggarwal et al., 2015). Maintaining crisis awareness, understanding the crisis management plan, and effective decision making eventually managers can encourage positive crisis management, perceptions, and organizational reduced loss prevention (Mansor & Nasir, 2017). Multiple literature sources indicated insights into crisis management and published results relating to stakeholder perceptions before, during, and after a crisis. Some of the published crisis events include the 1987 Black Monday crisis, 2003 Space Shuttle Columbia accident, 2008-2010 automotive industry financial downturn, and 2008 Takata Air Bag recall. Although published crisis management activities do influence consumers,

managers must be cognizant of information influences. Managers encouraging false or inaccurate information publication must understand they are encouraging ethical, moral, and social disobedience. Intentionally manipulating public opinion to increase reduced loss prevention or limit liabilities can create legal dilemmas. Additionally, creating or emboldening a culture supporting unethical actions erodes the organization's effectiveness and ultimately deteriorates reduced loss prevention.

Perceived crisis responsibility influences organizational success (Aggarwal et al., 2015). Organizations having culpability receive negative consumer experiences and organizations displaying responsible crisis management operations receive positive consumer expectations (Mansor & Nasir, 2017). Additionally, focusing on crisis communication does influence consumer perception (Mansor & Nasir, 2017). Aggarwal et al. (2015) and Sass and Szalavetz (2013) reported results consistent with findings in Mansor and Nasir's (2017) study. Although Mansor and Nasir found that crisis communication is a crisis management linchpin, Erickson and Liff (2017) contended that strong, well-informed, and proactive management determines crisis management effectiveness. Slow response or unclear managerial decisions inherently influence crisis management operational success (Erickson & Liff, 2017). Managers maintaining quality crisis communications regarding crisis management operations and defining answerability does influence stakeholder acceptance (Mansor & Nasir, 2017). Managers failing to provide public announcements concerning ongoing crisis within the organization cause degradation of the organizational image. Making public announcements, managers gain the opportunity to influence consumer awareness of the

crisis. Marketers can shape consumers perception of the organization influencing purchasing decisions and ultimately impact reduced loss prevention. Although not all consumers focus on the organization's in crisis management activities, the consumers focused on the organization's crisis management activities want to ensure they purchase products from a reputable organization.

Crisis management response strategies are helpful when developing crisis management plans. Marketers determining which strategies utilized will influence stakeholder perceptions. Utilizing scapegoating, justification, apology, and reminding strategies do not provide positive results when measuring the publics blame point of view (Bundy, 2015). Additionally, organizations experiencing a crisis struggle to maintain positive stakeholder perceptions (Bundy, 2015). Li and Zou (2016) reported results consistent with Bundy (2015). Maintaining dynamic product awareness as part of an overall crisis management strategy assists marketers in making decisions relating to customer perceptions (Li & Zou, 2016). Incorporating dynamic product awareness, strategy selection, and effective communication also creates consumer awareness enhancing public relations and perceptions of the organization (Bowen & Zheng, 2014). Managers within the organizations must consider strategic approaches to crisis management. Blaming other organizations does not resolve consumer apprehensions during a crisis. Maintaining blameworthiness does not favor well with consumers either; however, it does establish organizational managers as ethically acquiescent. Simultaneously justification and apology strategies also hinder crisis management operations. Stakeholders comprehend organizational operations are not error-free and

potential crisis scenarios can occur. When they do occur, utilizing justification or apology strategies alienate organizations creating consumer doubt, questioning if the organization can effectively manage the crisis. Also, maintaining a reminding strategy will not build consumer faith in a product. Managing the crisis, capturing lessons learned, and annotating the crisis event assists organizations in future operations. Reminding consumers of past transgressions heightens customer dissatisfaction and influences organizational reduced loss prevention (Bundy, 2015).

Crisis management requires more than effective and timely communication. Organizations maintaining a crisis management plan require trained and prepared personnel (Ali & Al-Aali, 2016). Ensuring employees understand and implement crisis management plans is critical to successfully navigating crises. Although crises occur rapidly, organized and trained personnel influence the outcome affecting organizational reduced loss prevention (Mansor & Nasir, 2017). Furthermore, maintaining the capacity to plan a crisis management strategy is part of training and preparing personnel (Adnan, 2014). Erickson and Liff (2017) reported results consistent with Ali and Al-Aali (2016) confirming trained and prepared personnel create positive crisis management results. Mansor and Nasir (2017) also confirmed trained and prepared personnel enhance crisis management plans adding to management effectiveness. Adding organizational policy implementations, regular discussions, and managerial focus on crisis management planning, development, and training will influence crisis survival (Erickson & Liff, 2017). Maintaining a crisis management plan is challenging. Organizational operations are dynamic in creating challenging situations. Training and preparing all employees for

every crisis scenario is unrealistic. Although training for every scenario is unrealistic, maintaining a crisis management plan safeguarding against catastrophic business failure, training all available employees, and garnering ingrained manager influences establishes a solid foundation for crisis management. Additionally, once employees internalize the crisis management plan updated refresher training applications maintain crisis management plan relevancy and continually remind employees vigilance can influence crisis management plan implementation and success. Unfortunately, not all organizations maintain an effective or relevant crisis management plan (Erickson & Liff, 2017). Organizations maintaining and training crisis management plans create a competitive business advantage versus unprepared organizations (Aggarwal et al., 2015).

Transition

In Section 1, I provided a concise overview of the problem and the purpose of this study, establishing the automotive industry encounters brand loyalty regarding product recall strategies. Continued discussions concerning the research purpose are to explore automotive industry management strategies relating to product recalls. After establishing the business problem, I outlined the specific interview questions I used for this doctoral research. The interview questions aligned with the conceptual framework. The conceptual framework for this doctoral research was the high-reliability theory established by Todd La Porte. Enhancing business understanding of product recall strategies and reduced loss prevention relationships creates business advantages and helps maintain a safe environment.

In the literature review, I provided readers with insight into my research topic of strategies to minimize the use of automotive products that contribute to recalls. The initial literature review section contains an introduction, a restatement of the purpose of my study, and literature search strategies. The literature review contains my exhaustive review of four topic areas. The first topic is a high-reliability theory. I provided insights into the high-reliability theory establishment in 1987. Establishing the high-reliability theory, I wrote about the structural solutions, error-free networks, and the cultural diversity of high-reliability organizations. The following pages contained brand loyalty literature discussions. Establishing customer perceptions are critical to brand loyalty; I added the development of learning organizations enhances brand loyalty. Additional brand loyalty research includes emotional value contributions, brand trust connections, and values concepts relating to brand loyalty. Management is the third literature review topic in which I reviewed the literature regarding how cost management influences reduced loss prevention. I highlighted ethical, value-based, sustainable, and transformational management are essential aspects of this doctoral research. The last literature review topic was crisis management. The review included communication, journalist publications on crisis operations, organizational responsibility acceptance, crisis management strategies, and plan development insights.

In Section 2, I will confirm the purpose of this doctoral study. Additionally, I establish the researcher roles and outline researcher requirements. The research method, design, and population and sampling criteria highlighted after the purpose outline the qualitative methodologies for this study. I will then establish the ethical research

mechanisms for this doctoral research, establishing Institutional Review Board required approvals, mandatory to complete the research. In the final portion of Section 2, I will mention the reliability and validity sections. Developing dependable research is critical to the doctoral study completion process.

In Section 3, I will present the findings of this research study. The Institutional Review Board provided approval I then collected and analyzed data for the research. The data and analysis information will remain in Section 3. Additionally, I will list the applications to professional practice, social change implications, recommendations for further research, and end with a concluding statement.

Section 2: The Project

Section 2 includes a restatement of the purpose of this study, a discussion of my role as the researcher, and the eligibility criteria regarding participation in this study. I explain the target population, describe the use of purposeful sampling, and justify the sample size. I explain why the qualitative methodology and case study design are appropriate for this study. I describe the data collection, organizational, and analysis techniques and procedures. I conclude Section 2 with a detailed discussion regarding the measures ensuring dependable, credible findings.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies some automotive industry managers use to minimize the use of products that contribute to a product recall. Data collection from three automotive industry managers from one company in southeastern Michigan provided valuable information from automotive industry focused managers. Selecting managers working in southeastern Michigan provided case-specific, successfully implemented strategies that reduce product recall. Implications from this study may help industry managers create positive social change by creating new ways to build safer vehicles, fashion systems reducing motoring customer injuries, and design product recall strategies improving automobile industry safety standards and practices. Additionally, managers may use the findings of this study to increase employee job satisfaction and improve trust between manager and nonmanager employees. Positive social change may occur through the expanded confidence in the safety and reliability experienced by drivers.

Role of the Researcher

I functioned as the researcher and the primary data collection instrument for this doctoral research. A researcher's primary purpose during qualitative doctoral research is data collection through guiding interviews, observations, analysis, and maintaining unbiased presumptions (Clark & Vealé, 2018). A researcher's role also requires high confidence levels, opposition management skills, multitasking abilities, and sufficient self-esteem quantities (Morse, 2015). Furthermore, the researcher must maintain basic ethical principles protecting the human subjects involved with the doctoral research aligning with the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). A researcher has the responsibility to protect research participants' privacy, participation capacity, and respect the individuals' right to ethical justice (Zahle, 2017).

I have a thorough understanding of the automotive industry and automobile parts replacement. My experience includes an associate degree in automotive technology. Additionally, past employments incorporate service technician with Sears Automotive, O'Reilly Automotive, and Napa Auto Parts, earning the Automotive Service Excellence Brakes certification. I also received additional mechanic training from the United States Army performing as a mechanic for 7 years. Through multiple years of automotive experience, I witnessed the importance of ensuring quality automotive parts installation occurs with every vehicle limiting or eliminating product recalls.

A researcher must avoid information bias or inaccurate measurement tool usage, data collection errors, or influential personal differences (Yates & Leggett, 2016). I used

pre-established unbiased questions during the interviews and data collection process to mitigate bias and avoid injecting my core beliefs or cultural perspectives. Moreover, past personal experiences potentially inject unwanted personal bias. Allowing personal bias and emotions to influence scholarly research is unacceptable and avoidance worthy (Abdalla, Oliveria, Azevedo, & Gonzalez, 2017). Knowing one's personal bias sensitivity and meeting ethical research parameters leads to bias avoidance or resolution (Yin, 2018). Understanding my personal bias and focusing on research parameters also mitigated data viewing through a personal lens or perspective.

Interviewing individuals possessing situational specific perspectives provided rich, detailed data regarding the case study topic. Implementing an interview protocol is a method a researcher uses to clarify the research and develop academic trust (Amankwaa, 2016). I used an interview protocol to maintain a consistent interview process (see Appendix A). A researcher using a protocol also ensures the data collection methods adhere to the Walden University Institutional Review Board (IRB) human subjects' protection requirements. Researchers protect the participants to ensure researchers' published documents avoid harming individuals or institutions relating to the research (Cooper & McNair, 2017). My obligation as the researcher was to comply with the basic ethical principles the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research Commission, mandated July 12, 1974. The commission members summarized the basic ethical principles outlined in the National Research Act and commission deliberations conducted in the 1976 Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and

Behavioral Research, 1979). I ensured that all participants remained autonomous agents and contributed their data freely, respecting their opinions and choices by aligning with the National Research Act and Belmont Report researcher obligations.

Participants

Qualified participants had experience in reducing product failure and the need for product recalls. The eligibility criteria for participating in this study were (a) a manager in the automotive industry, (b) used a successful strategy to minimize the use of products that contribute to a product recall, and (c) located in southeastern Michigan. A challenging portion of most doctoral research studies is the researcher attaining access to participants meeting selection criteria aligning with the research question (Moser & Korstens, 2017). The participants and organizations' time are valuable so establishing data collection times minimizing or avoiding work interruptions creates synergy and benefits all participants (Clark & Clark, 2015). A strategy I used to gain participant access begins by contacting the individuals through email or phone call. I used public contact information from business websites and Facebook to communicate with the participants (see Appendix B). Once given contact permission, I invited three individuals to participate. The key criteria for participant selection was a willingness to participate, fulfilling a management position, possessing an institutional safety working knowledge, knowledge of product recalls, experience with implementing strategies to minimize the use of products that contribute to a product recall and preparedness to sign informed consent forms.

Working relationships and organizational trust among the researcher and research participants are critical and require commitment from everyone involved (Bulatova, 2015). Working relationship development also requires trust (Barnes, Leonidou, Leonidou, & Siu, 2015). The participant must trust the researcher if the researcher desires inviolate or disestablished information (Birchall, 2014). Furthermore, the researcher must maintain confidence the participants provide trustworthy responses to all interview questions, avoiding bias (Yin, 2018). A trust development technique will be establishing and maintaining respondent confidentiality in written form. Moreover, reiterating that the research does not coincide with workplace retribution results in additional trust among all individuals participating in the research (Amankwaa, 2016). The participants understood the published doctoral study would not contain the names of participants or organizations. The participants also understood participating in the research was voluntary. I reviewed the informed consent form with the participants, noting that they have the right to withdraw from the study at any time.

Qualitative researchers interview participants to extract data for analysis (Brown & Danaher, 2019). Purposeful sampling is the intentional selection of participants with desirable preselected qualities providing participants with the desired case specific appropriateness (Parker & Northcott, 2016; Yin, 2018). The selection of unique participants providing topic focused rich information enhances researchers' ability to achieve data saturation (Fusch & Ness, 2015). Furthermore, the select participants being part of the case-specific organization represent the larger population (Brown & Danaher, 2019). I elected to use the purposeful sampling of marketing, management, and managers

because the uniquely positioned managers fulfill white collar positions and satiate decision-making positions. Additionally, focusing on the critical case type purposeful sampling may provide applicable insights into other automotive industry situations.

Research Method and Design

The focus of this study was to explore the strategies managers in the automotive industry use to minimize the use of products that contribute to a product recall. Qualitative methodology and case study design are ways researchers explore managerial challenges, answer socially derived business concerns, and explore high-reliability theory scenarios (Birchall, 2014). Selecting an effective research method also provides researchers processes for answering research questions (Korstjens & Moser, 2017). This section contains additional contentions supporting research methodology and design selections.

Research Method

I used a qualitative research methodology for this study. Researchers use the qualitative research methodology to provide exploratory techniques and collect data encompassing cultural, verbal, and social phenomena (Danielsson & Rosberg, 2015; Roszak, 2015). Additionally, qualitative researchers encapsulate data collection through open-ended questions, establishing verbal and nonverbal data collection opportunities to enrich data analysis and interpretation prospects (Morse, 2015). I used the qualitative methodology to collect data through exploratory techniques and asking qualified participants open-ended questions regarding the phenomenon. Researchers use the qualitative research methodology to collect rich data through semistructured interviews,

organizational documents, and observations of participants recorded in a reflective journal (Jitaru & Popescul, 2017). I conducted qualitative research to collect information-rich data from eligible participants through semistructured interviews, reviewing organizational documents, and recording reflective notes in a journal.

Quantitative methodology researchers employ numeric data, hypothesis development, and testing methods to answer research questions (McKenzie, 2015). Researchers conduct a quantitative study to test the validity of existing theories, develop new theories through statistical testing of numeric data, or measure the statistical strength of variables (Michaelson, McKerron, & Davison, 2015). The quantitative methodology researcher uses surveys containing closed-ended questions to collect primary data from participants (Concato & Hartigan, 2016; Doody & Bailey, 2016). In this study, I sought rich data from managers regarding the strategies they used to minimize the use of products that contribute to product recalls. Statistical testing of numeric data collected from closed-ended surveys would not result in data needed to answer the central research question of this study; therefore, I rejected the use of the quantitative methodology.

Researchers conducting a mixed-method research study combine quantitative and qualitative research methodologies, creating a complex research study (Yin, 2018). The mixed-method researcher must devote significant time and resources to collect qualitative and quantitative data, perform statistical analysis of numeric, quantitative data and interpret qualitative data, and present the findings from both types of data (Abro, Khurshid, & Aamir, 2015; Roszak, 2015). The objective of the mixed-method researcher is to conduct a study in which a single methodology would not result in the data needed

to answer the research questions (Mabila, 2017). Researchers choose to use a mixed-method approach when the need exists to collect qualitative and quantitative data to explore and examine the research problem (Halcomb & Hickman, 2015). I did not need to combine quantitative and qualitative methodologies to collect numeric data in addition to rich, qualitative data from participants to answer the research question; therefore, I did not use the mixed-method approach to conduct this study.

Research Design

Researchers use the case study design to contribute to understanding social, political, and organizational occurrences (Zahle, 2017). Furthermore, a case study design includes expressive and valuable information and is a means for the researcher to engage in holistic topic exploration (Heavey et al., 2014; Keenan, Teijlingen, & Pitchforth, 2015). Researchers using the case study design explore a complex phenomenon within a bounded, contextual setting (Morse, 2015). Additionally, researchers using the case study design focus on a set timeframe and circumstances regarding a particular subject matter (Yin, 2018). I selected a case study design because I wanted to explore a complex phenomenon transpiring in a contextual, business environment.

I considered the narrative research design for this doctoral research. Researchers using the narrative research design gather data from the participants' life stories and focus on retold experiences to explore a phenomenon (Birchall, 2014). Narrative researchers focus on stories from participants, regardless if true, to form a conclusion (McAlpine, 2016). Shapiro (2016) noted that researchers using the narrative design rely

solely on recounts of participants regarding the research topic. I did not propose to collect data using participants' life stories; therefore, I rejected the narrative research design.

The ethnographic research design was a consideration. Baskerville and Myers (2015) defined the ethnographic research design as the researcher conducting prolonged observations, interactions, and analyzing social interactions regarding human cultures. Ethnographic research entails the researcher observing, interviewing, and analyzing social phenomena (Kaplan, 2016). Ethnographic researchers emphasize social and cultural interactions with participants (Baskerville & Myers, 2015). I did not choose the ethnographic design because I was not collecting data regarding the social or cultural aspects of participants.

Data saturation is complex and difficult to determine when a researcher achieves saturation (Porcher, Ravaud, Tran, & Tran, 2016). Data saturation is an essential component of a credible, reliable research study (Porcher et al., 2016). Acquiring enough data for study replication signifies data saturation and research reliability (Fusch & Ness, 2015). Data saturation occurs when the researcher concludes additional information will not occur with further inquiry (Gentles, Charles, Ploeg, & McKibbin, 2015). I conducted data collection techniques focusing on participants who meet the eligibility criteria and concentrate on data relevant to answering the research question. Furthermore, interviewing automotive industry managers meeting the research criterion and reviewing organizational documents until no new information, themes, or patterns emerge was the means for achieving data saturation.

Population and Sampling

The sampling method for this study was purposeful sampling. Researchers use purposeful sampling when the need exists to identify participants with specific knowledge of the research topic and problem (Yin, 2018). Selecting a group of individuals with research topic understanding is a means for a researcher to collect information-rich data relevant to answering the central research question of the study (Jitaru & Popescul, 2017). Furthermore, using purposeful sampling and participant identification criterion is a strategy that researchers use to ensure data saturation (Reeves, 2017). I used purposeful sampling to select participants with specific knowledge of and experience in implementing successful strategies to minimize the use of products that contribute to a product recall in the automotive industry.

The target population consists of managers within an automotive company in southeastern Michigan who successfully implemented strategies to minimize the use of products that contribute to a product recall. Researchers seeking data saturation must determine if the purposeful sample of participants is an acceptable size and is the ideal number of participants to achieve data saturation (Kruth, 2015; Yin, 2018). A researcher conducting a limited scope case study might collect ample data to answer the research question and attain data saturation using from three to six participants, yet should review previous research studies to justify an initial sample size (Amankwaa, Hancock, Mueller, & Revell, 2016). Paull (2017) conducted qualitative case study research regarding the successful strategies managers implemented to reduce product-harm crises, reaching data saturation with a sample size of three participants. Akaeze (2016) conducted a qualitative

multiple case study of three automotive industry companies interviewing three business managers. Faciane (2018) conducted a qualitative case study to explore the strategies managers used to reduce product recall, using a sample size of five participants. Paull's, Akaeze's, and Faciane's published scholarly works establish three participants was an appropriate sample size for my study.

Researchers should select participants who possess a working knowledge and understanding of the research topic subject matter or situation (Foster, Hoover, Roth, & Strapp, 2018). The participants must also meet the role criteria for inclusion in a study for the researcher to answer the research question (Duan et al., 2015). Qualified participants had experience in reducing product failure and the need for product recalls. The eligibility criteria for participating in this study were (a) a manager in the automotive industry, (b) used a successful strategy to minimize the use of products that contribute to a product recall, and (c) located in southeastern Michigan.

Saturation achievement or data saturation requires data collection from enough participants to answer the research question (Boddy, 2016). Researchers must determine no new data, themes, or information will occur with additional collection of data (Porcher et al., 2016). Triangulation is the method of using multiple data sources achieving data convergence and saturation (Marshall & Rossman, 2016). The four different types of triangulation are analyst, methodological, theory-perspective, and triangulation of sources (Marshall & Rossman, 2016). Boddy (2016) contended analyst triangulation requires multiple researchers, methodological triangulation requires the researcher to use different data collection methods, and theory triangulation requires the researcher to use multiple

theories to interpret data. In this study, I used methodological triangulation to confirm data saturation. Researchers using methodological triangulation focus on different data sources to be able to crosscheck one set of data with a second set of data (Fusch & Ness, 2015). I used the data generated from the participants' answers the interview questions and a review of relevant documents to achieve data saturation. I conducted interviews daily within the automotive company areas until completing all the interviews. Each day's closing activities included data review of the interview questions, interview data, and company documents as I searched for repetitive data. Once I determined no new data themes or information was available regarding the research question and interview questions, I concluded the interview process. Researchers use member checking to reach data saturation (Cypress, 2017; Fusch & Ness, 2015). I transcribed the interview audio recordings, develop an interpreted summary of the transcripts, met again with the participants, and ask them to validate my interpretation of their interview responses. During the member-checking session, I asked the participants if they had any new information to offer regarding the strategies that they used to minimize the use of products that contribute to a product recall. I continued data collection until no new themes or patterns emerge.

The interview setting is critical to building trust with the participants. The interviewer may not have control over the location and may need to adjust to the participant's schedules or restrictions (Amankwaa et al., 2016). Furthermore, the interview location must be convenient for all parties, private, and logistically supportable (Morse, 2015). The initial interview setting was a quiet location near the automotive

company headquarters. I gained access to this interview site through prior coordination with the site owner. I needed to adjust the interview location. The alternate location was away from the headquarters and located in a library location conducive to the participant's requirements.

Ethical Research

Ethical researchers obtain informed consent from participants prior to engaging in any data collection efforts (James & Busher, 2015; Resnik, Rasmussen, & Kissling, 2015). The informed consent form should contain unambiguous language regarding the purpose of the research, the risks and benefits of participating in the study, the time commitment associated with participation, and any incentives offered or the lack thereof (Hull & Wilson, 2017). I obtained informed consent from participants prior to engaging in data collection. I used the informed consent form to convey to the potential participants the risks and benefits of participating in this study, their estimated time commitment, and that participating in this study was voluntary. Prior to conducting the interviews, I reviewed the informed consent form with the participants to ensure they understand that they can withdraw from participating in the study without any repercussions. Participants could withdraw from the study before, during, or after the interview by conveying their decision in-person, or by email or telephone. Despite signing a written consent establishing data collection authorization, the participants had the nondiscriminatory right to terminate the interview at any time. I did not have to document any participant withdrawal and destroy any associated data or records.

Researchers should maintain an audit trail to document participant withdrawals from a research study (Beskow & O'Rourke, 2015).

As noted in the informed consent form, participants did not receive monetary or other forms of compensation for participating in this research study. I provided each participant with a 1-2-page executive summary of the findings. Social science researchers should avoid offering compensation to participants or engaging in other coercive actions to persuade people to participate in a research study (Hidi, 2016). Incentivized participants are likely to result in less credible findings (Hidi, 2016). To improve the prospects of credible findings, I did not offer participants any participation rewards.

Researchers conducting an ethical research study abide by the principles contained in the Belmont Report (Cooper & McNair, 2017). To abide by the Belmont Report principles, a researcher must respect the participants' privacy, obtain informed consent from participants, and treat all participants with fairness and justice (Zahle, 2017). Ethical researchers use tremendous discipline and the establishment of procedures to protect the participants (Johnson, 2015). I abided by the principles of the Belmont Report while conducting this research study by maintaining the confidentiality of the participants, obtaining informed consent from participants prior to collecting data, and treating all participants with respect and fairness. I used an interview protocol to ensure equal treatment of all participants (see Appendix A).

I obtained IRB approval from Walden University before beginning data collection for this study. Acquiring IRB approval from the affiliated governing body is a means to ensure protection for the institution, participants, and the researcher (Rothwell et al.,

2015). IRBs are the governing body within research universities that ensure the ethical treatment of human subjects (Blackwood et al., 2015; Murtha & Lipkin, 2017). The Walden University IRB approval number is 05-06-19-0498694.

Researchers have the responsibility of safeguarding all research files, logs, memos, notes, recorded material, and other documents containing participant information against public exposure (Rothwell et al., 2015; Yin, 2018). I created encrypted digital and analog files containing collected data, storing the information in a fireproof locked safe in my home office for 5 years. Once the 5 years pass, I will shred all analog files and destroy the external storage device containing all recorded and digital files.

To maintain ethical research standards and abide by the Belmont Report, researchers must protect the confidentiality of participants (Johnson, 2015). Avoidance of including any personal identifiers of participants in the published study is a paramount duty of researchers (Rothwell et al., 2015). I used the code names of P1, P2, P3, P4, P5, and P6 for the participants within the published study to maintain their confidentiality. I did not include the name of the company serving as the research partner organization for this single case study in the final published study.

Data Collection Instruments

I served as the principal data collection instrument and analyst. The primary process consists of semistructured interviews with open-ended questions facilitating shared insights provided by the participants (Clark & Vealé, 2018). Researchers should collect data using trustworthy methods to avoid data corruption or contamination (Yin, 2018). The semistructured format is a means for researchers to establish a flexible

process for collecting data (Johnson, Kallio, Kangasniemi, & Pietila, 2016). Additionally, I asked open-ended questions during the semistructured interviews to gain rich data from participants and contribute to the reliability and validity of this study. I developed ten open-ended interview questions contributing to the semistructured interview process (see Appendix A).

The data collection process began with my establishing an interview protocol (see Appendix A). The protocol enhances trustworthiness, reliability, and dependability during the research progression (Amankwaa, 2016). The protocol is a means for the researcher to adhere to reliable data collection methods while simultaneously protecting the participants and institutions (Morse, 2015). Utilizing the protocol, I scheduled interviews per the participants' availability. Maximization of easily accessible locations to conduct face-to-face interviews was paramount. I used handwritten notes and a digital recording device to contribute to the dependability and credibility of the data. Upon completion of the interview data collection, data transcription began using Dragon computer software. Company data, business sources, sanctioned Internet sources, and The United States Securities and Exchange Commission documentation augmented the interview data.

Data Collection Technique

Data collection is an integral segment of research. Scholars formulating research documents utilize a multitude of data collection techniques striving to achieve unbiased, accurate, and relevant collected data. The interview process is a means for the researcher to observe the participant's nonverbal characteristics contributing to researcher data

comprehension (Abbott, Hastie, & Jepson, 2015; Clark & Vealé, 2018). Furthermore, the interview process is an acceptable data collection method for qualitative research (Johnson et al., 2016; Leedy & Ormrod, 2016). During this study, I used open-ended questions and a review of organizational documents to generate data.

The first data collection process step was the acquisition of the IRB approval to conduct the study. Once the IRB approved the research study, the next step consisted of previous knowledge and information utilization. The literature review process is a collection vehicle for researching specific information concerning the research topic. A comprehensive knowledge base obtained beforehand leads to subject matter expertise and professionalism. Contacting the participants aligns with protocol and enhances researcher and participant relations. The university must agree to participate before contacting participants. The next step required contacting participants and scheduling interview times, dates, locations, and voluntary agreement for participation.

I had an obligation to protect participant rights. The participant includes the individuals participating and organizations affiliated with my study. Before data collection, the participant provided a signed consent form acknowledging their rights as a participant. Once the interview process was complete, I compiled and transcribed the digitally recorded interview in written form. Dragon computer software was the transcription software utilized for the research study. A manual review of the transcribed document minimized transcription errors or misinterpretations.

Member checking is a technique a researcher applies to improve interview data accuracy and validate the participant's narrative (Cypress, 2017; Scott, 2016). Providing

the participant with written documentation and allowing adjustments encourages clarification, increases researcher trustworthiness, and alleviates miscommunications (Lemieux, 2016). I provided the participants with an interpreted summary of the interview transcript to provide them with the opportunity to validate that I accurately interpreted their responses to the interview questions. I phone called each participant to discuss the study data. The participants provided additional quality measures to ensure the interview data was unbiased, accurate, and relevant.

Semistructured interview data collection is an acceptable method for research data collection. Although semistructured interview data collection is acceptable, the process does contain some disadvantages. A disadvantage may be the researcher does not have control over the time or location of the interview (Amankwaa et al., 2016). Additionally, the interview location may not be conducive to participating parties (Morse, 2015).

The semistructured interview process also contains some advantages. The interview process fosters shared insights experienced by the participants (Bell, 2014). The interview process also provides the researcher flexibility by adjusting the collection process relating to participant nonverbal cues (Johnson et al., 2016). The researcher also has additional process control maximizing all aspects of data situation achievement (Duan et al., 2015).

Reviewing company documents as a data collection technique has some advantages and disadvantages. Researchers review organizational documents to collect corroborating evidence regarding the phenomenon (Sherif, 2018). Collecting data from company documents is a means for researchers to gather information from a second

source to crosscheck the validity of the interview data (Yin, 2018). Disadvantages that exist regarding document review as a data collection technique are data might be inaccurate, out-of-date, incomplete, and difficult to retrieve (Morse, 2015).

Some researchers conduct a pilot study to test the procedures in preparation for a larger study (Henson & Jeffrey, 2016; Yin, 2018). A pilot study is a means for the researcher to authenticate research and interview questions, validate an appropriate sample size, and verify the time commitment of participants (Hazzi & Maldaon, 2015). I conducted a limited scope case study using established research procedures and protocol. I did not need to conduct to a pilot study in preparation for a larger study.

Data Organization Technique

Researchers should pay meticulous attention to data organization details to ensure compliance with university directives and maintain ethical standards (Morse, 2015). I constructed digital and analog files for each participant. Maintaining separate data for each participant contributes to data integrity, maintaining the research data sanctity (Amankwaa, 2016). I identified each participant with an individual generic code, protecting participant identifications as noted in the Belmont Report. Once the interviews were complete, I organized and maintained all data collected from the participants in their perspective digital and analog folders. The organization process occurred within 48 hours of the interview.

Microsoft Word and Excel products are essential to the efficient completion of my research study. All references, transcripts, and data were a part of the Microsoft Word suite of tools. Rothberg (2017) noted the value of using Microsoft Word and Excel to

organize data. I used Microsoft Excel to augment the tracking of interview dates, times, locations, and participants. Researchers should use password-protected files to protect the data (Rothwell et al., 2015). Each of the Microsoft documents created supporting the research is password protected with only myself maintaining the password. Additionally, the external storage device containing the research files is also password protected.

Safeguarding files, logs, memos, notes, recorded material, and other documents containing participant information against public exposure is a researcher's responsibility (Yin, 2018). I created digital and analog files containing collected data, storing the information in a fireproof locked safe for 5 years. Once the 5 years pass, I will shred all analog files and destroy the external storage device containing all recorded and digital files.

Data Analysis

I used thematic analysis to analyze data in this study. During data analysis, I used methodological triangulation for crosschecking interview data with document data. Methodological triangulation is a qualitative research technique implemented by collecting data from multiple sources of evidence and then crosschecking one set of data with another set of data (Fusch & Ness, 2015). Researchers develop a deeper understanding regarding the phenomena by engaging in methodological triangulation (Marshall & Rossman, 2016). Researchers employing individual interviews as a qualitative inquiry and collecting data from different types of managers contribute to multiple viewpoints and contributes to data validation and reliability (Marshall & Rossman, 2016). Furthermore, utilizing a literature review, public documents, and

corporate documents combined with interviews may achieve multiple data source gatherings (Marshall & Rossman, 2016).

The principal reason for collecting data is analysis; scrutinizing the information for significant descriptions, patterns, values, or concepts correlating to the research question (Yin, 2018). Face-to-face interviews are the primary data collection source. Furthermore, I used company documents, records, and the government filed documents to enhance the data triangulation process. Crystal (2017) noted that the use of Dragon voice recognition software is a means for researchers to develop accurate interview transcripts. I developed accurate interview transcripts using Dragon voice recognition software.

The initial data analysis began with a thorough literature review. I used the literature review process to provide an empirical understanding of previously written documentation concerning the research question. I developed category names and descriptive words for future NVivo software utilization as part of the literature review process. Coding the data was critical to the theme or pattern identification (Chowdhury, 2015). Once the literature review process was complete, the interview process commenced. I used a digital recorder complimenting handwritten notes during the face-to-face interviews. Utilizing the Dragon voice recognition software, transcription transferred data from voice to Microsoft Word or written form. A comprehensive attending of recorded and written data contributes to efficient data analysis.

The data from all sources received coding. During the coding, I focused on categories developed during the literature review process. Encoding the data and categories provides meaningful descriptions NVivo used to identify themes or patterns

(Sepasgozar & Davis, 2018). I focused on the key themes relating to successful strategies managers used to minimize the use of products that contribute to product recalls during the coding process. Within the presentation of the findings, I exposed the link between the key themes and the high-reliability theory. I used the findings to confirm or refute the scholarly findings of researchers with studies published from 2017-2019.

Reliability and Validity

Reliability

Developing dependable research material is fundamental to qualitative research. Reliability, a measure of research consistency and replicability, is the qualitative research materials' dependability (Noble & Smith, 2015). Qualitative researchers ensure dependability by documenting the interviews, engaging participants in member checking, using methodological triangulation, and reaching data saturation (Fusch & Ness, 2015; Marshall & Rossman, 2016). Utilizing digital recordings for each interview provides total recall regarding each interview session. Increased recall accuracy will limit the human error factor when managing participant provided research data. Another technique I used to ensure dependability is member checking of data interpretation. Researchers enhance the dependability of the interview data by allowing participants to review the researcher's interpretation of their interview responses during member checking sessions (Marshall & Rossman, 2016).

I ensured the dependability of the data by reaching data saturation and engaging in methodological triangulation. Data saturation is the collection of all the data needed to answer the research question (Fusch & Ness, 2015). Identifying no new data, themes, or

information will occur is paramount to researchers achieving data saturation (Porcher et al., 2016). I collected interview and document data until no new themes or patterns emerged. I used document data to triangulate the interview data to crosscheck the validity and dependability of the data. Triangulation is a technique scholars use to gather multiple data streams to reach data convergence (Marshall & Rossman, 2016). Determining no new data themes or information are not available will signify the research data collection will end.

Validity

Research participants determine the validity or credibility of legitimacy concerning the phenomena research outcomes (Marshall & Rossman, 2016; Teusner, 2016). Furthermore, documenting each research phase, including data collection, organization, analysis, and interpretation, is a means for researchers to improve credibility (Birt, Scott, Cavers, Campbell, & Walter, 2016). Marshall and Rossman (2016) defined credibility as research that is trustworthy and believable. I meticulously documented each research phase to improve the credibility and trustworthiness of the data and the findings. Member checking is a process researchers use to ensure credible data (Yin, 2018). I created an interpreted summary of the interview transcripts, engage the participants in a follow-up meeting, and asked them to verify the accuracy of my interpretation of their interview responses to improve the credibility of the data.

Confirmability is the degree to which the interpreted data results in the researcher's representation of the participants' responses, free from researcher bias, opinions, or viewpoints (Birt et al., 2016). Researchers ensure confirmable data and

finding by remaining objective during data collection and analysis, mitigating bias, and maintaining an audit trail for each phase of the research process (Hays, Wood, Dahl, & Kirk-Jenkins, 2016). Presenting the findings from the participants' perspective is a paramount duty of researchers striving for confirmability (Johnson & Rasulova, 2017). I remained objective during all phases of the research, maintained an audit trail, and presented the findings from the participants' perspective. Researchers must be aware of their bias during research (Astedt-Kurki, Kikkala, & Sorsa, 2015). Maintaining a preconceived position while conducting research establishes the researcher's bias and negates the researcher's credibility (Yin, 2018). The doctoral committee provided structured validation combating researcher bias during my research. Additionally, I used member checking to mitigate bias and improve the dependability, credibility, and confirmability of the data. Researchers engage in member checking to allow the participants an opportunity to validate an interpreted summary of the interview transcripts to increase data dependability, accuracy, and validity (Marshall & Rossman, 2016). Furthermore, member checking is a means for the participant to comment on and approve researchers' interpretations (Iivari, 2018). I provided the participants with an opportunity to review my interpretation of their interview responses during a follow-up member checking session.

Korstjens and Moser (2017) defined transferability as research transferability to other context or situations by future researchers. Researchers improve the prospects for transferability or the degree of utilization regarding the researcher's experiences, participants, and research material applicable to other settings, groups, or scenarios

through comprehensively documenting the research process, ensuring dependable data, and presenting credible findings (Korstjens & Moser, 2017). I documented each phase enhancing researcher accuracy conforming to credibility and transferability focused imperatives. The documentation consisted of digital recordings and handwritten notes, compiled and organized daily. I ensured the dependability and credibility of the data by using member checking and methodological triangulation as well as reaching data saturation. Readers and nonparticipants afforded the opportunity to apply or fit the research material to other instances prolongs the usefulness of this research study.

Researchers conducting a qualitative case study must reach data saturation to ensure the dependability, credibility, and confirmability of the findings (Fusch & Ness, 2015; Yin, 2018). Data saturation complexities and identification criteria occur when gaining additional data will not occur with further inquiry (Porcher et al., 2016). I conducted interviews with automotive industry managers, engaged the participants in member checking, reviewed company documents, and continued data collection efforts until no new themes or patterns emerged. Once data collection and analysis no longer change the researchers' research problem comprehension, data saturation achievement signifies the need to avoid further data collection (Porcher et al., 2016).

Transition and Summary

In Section 2, I confirmed the purpose of this doctoral study. Additionally, I established my role as the researcher and explained and justified the research method, design, and population and sampling criteria. I then established the ethical research procedures for this doctoral study, noting the need for IRB approval before data

collection. I explained the data collection, organization, and analysis procedures. In the final portion of Section 2, I explained the procedures to ensure dependability, credibility, and confirmability.

Section 3 will contain the presentation of the findings. Once the IRB provided approval, I collected and analyzed data for the research study. The data and analysis information will remain in Section 3. Additionally in Section 3, I will provide the applications to professional practice, social change implications, recommendations for further research, and a concluding statement.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore strategies some automotive industry managers use to minimize the use of products that contribute to a product recall. I explored the study topic by interviewing three automotive industry managers in one Michigan company who successfully used strategies to minimize the use of products that contribute to a product recall. The data came from manager interviews, manager-employee observations, and company documentation from three separate managers. The information became repetitive after three interviews in the same company, achieving data saturation. The findings indicated methods that the managers used to minimize the use of products that contribute to a product recall. Three important themes emerged during data analysis: communication strategy, inspection strategy, and process strategy. The three strategies used by the automotive industry managers in one company may be beneficial to other managers seeking to minimize the use of products that contribute to a product recall.

Presentation of the Findings

The overarching research question for this research was *What strategies do some automotive industry managers use to minimize the use of products that contribute to a product recall?* I conducted semistructured interviews using open-ended questions collecting data from three participants who consented to the interviews and agreed to have their responses recorded. I used NVivo 12 software to identify themes and patterns

from the responses of participants and the organizational documents. I coded participants names as P1, P2, and P3 to ensure their privacy and confidentiality.

Theme 1: Communication Strategy

The first theme identified during the data analysis process was a communication strategy. All three of the participants noted they used the communication strategy daily and occasionally on an hourly basis to minimize the use of products that contribute to a product recall. Focusing on internal communications all three participants also stated they use some form of digital communication to minimize the use of products that contribute to a product recall. P2 stated, “if you run into an unusual situation that you haven’t seen before, there are different avenues that we can use on a national level.” P2 also noted the different communications avenues included email, bulletins, phone communications, and an internal automated company-specific system. P1 and P3 confirmed the use of email and phone communications as mitigation techniques for minimizing the use of products that contribute to a product recall. P3 added, “Sometimes it’s not always a part” that contributes to product recalls. P3 confirmed tracking software updates, failures, and implementing effective communication strategies is critical in minimizing the use of products that contribute to a product recall. Table 1 is a display of the subthemes of the communication strategy

Table 1

Subthemes of Communication Strategy

Subthemes	Participant	Percent of use by participants
Email	P1, P2, P3	100%
Phone	P1, P2, P3	100%
Bulletin	P3	75%
Automated Internal Company System	P2	25%

All participants confirmed using the email system as a primary communications system. Furthermore, all participants confirmed using email provides a standard form of communication supported by their organization and continues as part of the companies preferred communication mode. Focusing on emails sent internally between managers is an effective method for minimizing the risk regarding products, streamlining the communications process, and increasing product quality (Porporato, 2016). The communications strategy used by managers confirms the research of Porporato (2016) in that using systems to improve product quality while simultaneously lowering product defects enhances company operations.

All participants explained the effectiveness of using the phone as an effective communications strategy. P2 stated, “We call a national database and confirm if the product is part of a recall.” Using local information, all participants maintain a local data network and communicate strategies to minimize the use of products that contribute to a product recall. The telephone and data center communication strategies used by automotive industry managers confirm the research of Kache and Seuring (2017) in that

managers effectively using digital systems improve communication speeds and improve the output of information.

P3 described the manufacturer using bulletins is an effective communications strategy. P3 stated, “The manufacturer provides bulletins notifying us the product is recalled.” Although bulletins are a one-way communication tool, they still provide P3 with a valuable communication tool used locally. P3 used the bulletin to communicate with other members of the organization minimizing the use of products that contribute to product recall.

Researchers use methodological triangulation to ensure data saturation, credibility, validity, and reliability of the data (Marshall & Rossman, 2016). Collecting and analyzing multiple data sources also minimizes researcher bias and enhances researcher rigor (Fusch & Ness, 2015). I used data from face-to-face interviews, publicly available organizational documents, and other documents relevant to the research topic. Furthermore, I used my journal entries to further the methodological triangulation process. I reviewed the automotive company’s website, finding that a communication strategy is paramount for the company’s ability to minimize the use of products that potentially contribute to a recall. I reviewed the company’s website, court documents, and the National Transportation Safety Board (NTSB) documents regarding the company’s communication strategy to mitigate the effects of product recalls. I reviewed the company’s annual reports from 2015-2018, identifying that the company leaders prescribe the use of a communication strategy to avoid using components that contribute to a product recall.

The findings regarding managers using the communication strategy align with the high-reliability theory. Weber (2015) established that companies performing as high-reliability organizations develop principals and procedures relying on effective communications to remain resilient. Gale et al. (2016) also surmised that high-reliability organizations use hierarchical control mechanisms enhancing communication and control increasing operational effectiveness. Good managers continually focus on improving loss prevention measures, capitalizing on effective communication as part of a comprehensive control mechanism to reduce losses (Kaila, 2017). Managers understanding the dynamics of an effective communications strategy and hierarchical control mechanisms contribute to high-reliability organizational development. Adding control measures also enhances managers' strategies to remain resilient.

Theme 2: Inspection Strategy

The second theme identified during the data analysis process was the inspection strategy. All three participants acknowledge using inspection strategy weekly and occasionally daily to minimize the use of products that contribute to a product recall. All three participants also noted using an inspection process creates increased time requirements to the automotive parts process and confirm the inspection process enhances operational effectiveness. P1 stated “We do a vehicle inquiry on every ticket written for every car.” The vehicle inquiry provides the organization the opportunity to review potential parts already listed within the organization that may fail. Although the part was operational upon vehicle arrival, the managers can choose to replace the part before part failure. P2 affirmed the vehicle inquiry process is a critical aspect of finding

defective parts before they fail. Specifically, P2 stated “The majority of recalls we do are software upgrades.” P2 used the digital inspection process to identify software failures prior to customers using the vehicle. P2 also confirmed “We do a lot of inspections that may affect many vehicles.” P3 stated “The inspection process is how we control the product recall process.” P3 noted using the inspection process information to compare with the organizations data base assists in identifying parts they may contribute to product recalls. Table 2 is a display of the subthemes of the inspection strategy.

Table 2

Subthemes of Inspection Strategy

Subthemes	Participant	Percent of use by participants
Visual Inspection	P1, P2, P3	100%
Digital Inspection	P1, P2	25%
Measuring Inspection	P2	15%

The visual inspection processes all three participants used is an intricate part of their daily operations. P2 observed that, although inspecting products does require a little more time, the process allows managers the opportunity to identify products that may contribute to product recall before installation. P3 noted using the visual inspection process on every single product applied does not occur 100% of the time; P3 confirmed the visual inspection process usage occurs daily. Furthermore, P1 surmised identifying product failures, defective products, or incorrectly manufactured products contributes to enhanced safety for their customers.

The digital inspection processes P1 and P2 used occur on a limited basis. P2 noted that not all products used by their company are digital or have a digital aspect.

Additionally, not all the products P1 and P2 used receive a digital inspection before installation. P2 stated digital inspections occur on some products after installation. P2 confirmed the organization installs the product and digitally inspects the product before returning the customer's automobile.

The measuring inspection P2 used only occurs 15% of the time. P2 stated, "Sometimes you run into an unusual situation, something you haven't seen before and there are different avenues to gain insight." P2 referred to selective specific measurable mechanical products requiring the use of calipers or other mechanical measuring devices. Although all three participants noted their products derive from specific vendors, P2 surmised some of the products visually do not confirm to manufacturer standards. When P2 identified these products do not meet manufacturer standards, P2 then used a measuring inspection process to determine if the product may contribute to a safety situation or product recall.

I used methodological triangulation to improve the validity of my study. Focusing on publicly available organizational documents, I enhanced researcher processes and minimized personal bias. I reviewed the company's website, annual reports from 2015-2018, court documents, NTSB, and U.S. government reports during methodological triangulation. The company website, court documents, NTSB, and annual reports contained specific language directed to managers to ensure proper inspection of all automotive components prior to installation. The U.S. government reports included

content regarding the company manager's ability to properly inspect all components to minimize the use of products that contribute to a product recall. Additionally, I used data from face-to-face interviews and journal entries to complete the methodological triangulation process.

The findings regarding managers using the inspection strategy aligned with the high-reliability theory. Managers using the inspection strategy supported Hesjevoll, Naevestad, and Phillips's (2018) findings that managers using inspections contribute to the reduction of risk and damages within organizations. The findings also support the use of inspections to prevent complex digital issues within the company, supporting Huzita, Merlin, Ribeiro, Sgarbi, and Trindade's (2016) findings. Additionally, Weber (2015) found that organizations focusing managers on effective product recall identification and influencing managers' actions relating to product recalls is a characteristic of quality management. Managers focusing on inspection strategies enhance product recall identifications and increase the organizational risk reduction processes. Furthermore, managers understanding inspection strategies assist in identifying complex digital issues before consumer usage.

Theme 3 Process Strategy

The third theme identified during the data analysis process was the process strategy. All three participants confirm the process strategy is an important part of manager operations. P1 noted identifying defective products and product recalls is an important part of safety. P1 also stated if they want to stay in business the organization must abide by safety standards and established laws. P2 mentioned the National Highway

Traffic Safety Administration (NHTSA) provides governmental oversight of the automotive industry. P2 also affirmed establishing processes to identify NHTSA established standards increases the chances of identifying products that may not be safe, meet NHTSA requirements, and might contribute to a product recall. Table 3 is a display of the subthemes of the process strategy.

Table 3

Subthemes of Process Strategy

Subthemes	Participant	Percent of use by participants
Safety	P1, P2, P3	100%
Law and Regulation Compliance	P1, P2, P3	100%

The safety process strategy all participants used adheres to company policies and procedures. More specifically, the company policy is to remove or replace any product deemed unsafe or potentially creates a product recall. The company policy to remove or replace these potentially defective products aligned with the publicly available organizational documents I reviewed during this study. All three participants agreed that establishing a standardized safety process for identifying products that may lead to a product recall increases the possibility of aligning company operations with established safety requirements. P3 noted, “Having an established process for safety checks takes all the guesswork out of my job.” P2 also surmised standardizing safety processes helps protect the customers and provide a better experience with the organization Managers focusing on company policies and procedures regarding safety processes create an environment where following safety procedures protects the company and consumer.

All three participants noted automotive manufacturers must follow certain laws and regulations to produce automobiles. Establishing a system to maintain legal compliance is a daily process and P1 noted establishing a process to maintain legal compliance is part of the manager's job description. P2 also remarked although the local operation has individually set up operations to follow the law, the larger organization also publishes directives or bulletins assisting managers in legal compliance. I reviewed the company's website, court documents, NTSB, annual reports from 2015-2018, and U.S. government reports during methodological triangulation. The court documents included content regarding the company manager's ability to establish processes to maintain law compliance and minimize the use of products that contribute to a product recall. I also used journal entries and face-to-face interview data to complete the methodological triangulation process.

Consolini and La Porte (1991) found that organizations developing systems to avoid accidents in high accident-prone industries align with the high-reliability theory. The findings from this study establishing participants developing safety and law and regulation compliance processes aligns with the high-reliability theory. The findings also confirm the research of Li, Li, Wang, and Wang (2019) establishing that managers developing and implementing enhanced processes increasing operational effectiveness can improve organizational products.

Applications to Professional Practice

The automotive industry is a collection of complex machine manufacturing companies that sometimes experience costly product recall scenarios that develop into

brand loyalty public relations situations (Scovel, 2015). Managers in the automotive industry might apply the findings in this study to develop strategies to minimize the use of products that contribute to a product recall. Automotive managers could implement a communications strategy. Capitalizing on email communications, managers could share information with local and national level managers identifying potential products that may contribute to a product recall. Managers also may employ effective telephonic measures to communicate with other managers and product manufacturers with possible product recall situations. Managers should consider participating in the company's automated internal system. Effective use of the company database and automated system may increase the identification of products that may lead to a product recall. Early identification can allow managers to minimize the use of defective products.

The managers who participated in this study used an inspection strategy to minimize the use of products that contribute to a product recall. Automotive managers might apply the findings of this study to an inspection strategy or program within the organization. Managers could develop and implement a visual inspection program to increase the chances of defective product identification. Automotive managers could also improve consumer brand loyalty by digitally inspecting electrical products, identify products that may cause a product recall before product installation. All three participants identified safety as an important aspect of their inspection strategy. Managers could apply the findings of this study and develop a measuring program for key safety related automotive products. Effective measuring of key safety related automotive products could minimize the use of products that contribute to a product recall.

The application of findings in this study could contribute to safer automotive products. Automotive managers could develop a process strategy to improve company operations. Implementing a process strategy focusing on product safety could lower the use of products that contribute to a product recall. Furthermore, adding a process strategy to remain within the parameters of the law may increase customer brand loyalty and brand image.

Implications for Social Change

Automotive industry managers utilizing effective strategies minimizing the use of products contributing to a product recall potentially reduce the impact on the environment. Managers' effective strategies influence manufacturing may decrease waste or failed product production. The fewer products produced failing to meet manufacturer specifications may lower the environmental impact. Managers adhering to social responsibility obligations may also understand their strategies influence operational performance while simultaneously benefiting society (Miller, 2016).

Providing increased awareness of product recall causation, managerial decisions, and product recall operations regarding business ethics can increase the reliability and trustworthiness stakeholders desire. Managers establishing trustworthy practices and decrease or eliminate unethical corporate practices increase stakeholder satisfaction and loyalty (Bachnik & Nowacki, 2018). Managers also influence stakeholder trust, community relations through enhancing automotive industry supporting organizations. Managers utilizing effective strategies increasing productivity requires increased supporting organization requirements. Supporting organizations may choose to relocate

closer to automotive production facilities. Increased supporting operations in the auto manufacturers' location may create new opportunities for local employment. Increased employment opportunities may increase the local standard of living. Another benefit of supporting organizations relocating to the auto manufacturing location is streamlining of the logistical support process. Decreasing the travel time and distance may decrease greenhouse gas emissions, energy costs, and operational storage costs. Lowering greenhouse gas emissions can potentially improve the local community and worldwide environment.

Recommendations for Action

The purpose of this qualitative single case study was to explore strategies some automotive industry managers utilize to minimize the use of products that contribute to a product recall. I recommend that automotive industry managers use effective communication strategies to mitigate the use of products that contribute to a product recall. Using the findings in this study, automotive industry managers may reduce the number of product recalls and influence company policies regarding products that may contribute to a product recall.

I recommend managers in the automotive industry adopt an effective communication strategy. Utilizing email as a mode of communication may enhance operational effectiveness and minimize the risk regarding products and product recalls. Email communications are an effective mode of communication for transferring information internally and externally of the organization. I also recommend implementing telephonic communication strategies to augment the email communications

strategy. Although email can be an effective communications mode, occasionally email communications are not timely. Implementing telephonic communications increases the possibility of real-time communications concerning products that may contribute to a product recall. Furthermore, implementing the use of an automated internal company system provides an updated and historical communications strategy for products that may contribute to a product recall. Developing and maintaining an automated internal company system is an effective method for minimizing the usage of products that may contribute to a product recall.

I recommend automotive industry managers adopt an effective inspection strategy. Managers adopting a visual inspection strategy to identify products that may contribute to a product recall can minimize the risks regarding safety or safety related concerns. Furthermore, instituting a digital inspection strategy coinciding with the visual inspection strategy assists managers in identifying products that may contribute to a product recall. Identifying the products that may contribute to a product recall before consumer use can build trust with stakeholders and decrease safety related product failures.

I recommend managers adopt an effective process strategy to improve company operations. Implementing a process to follow all safety and regulatory directives can enhance stakeholder trust. An effective process strategy can also encourage efficient and accurate identification of products that may contribute to a product recall. Furthermore, adopting an effective process strategy will assist managers in fostering a culture of safety, customer satisfaction, and a culture of professionalism.

Researchers publishing findings of their study contribute to the existing body of knowledge (Hangel & Schmidt-Pfister, 2017). I intend to enhance the existing body of knowledge through publishing this study. Furthermore, I will contribute to the body of knowledge in the area of business administration and management. I plan to develop and submit articles for publication to the following peer-reviewed business journals: (a) *American Journal of Industrial and Business Management*, (b) *Journal of Operations Management*. I will also publish my study in ProQuest.

Recommendations for Further Research

The findings from this study may warrant further research into the strategies automotive industry managers use to minimize the use of products contributing to a product recall. A limitation of this study was all participants work in the automotive industry. I utilized a single case study research design to research the phenomenon. Future researchers could employ the same single case study research design on the same topic in a different industry. Future researchers could select managers from the aircraft, locomotive, and construction industries as research participants expanding the scope of this study.

Another limitation of this study was the single case study research design in a single location. Future researchers should consider a qualitative multiple case study in a different location. Future researchers conducting a qualitative multiple case study in a different location can test the transferability of the findings of this study. Furthermore, the geographical location may represent a narrow sample. Future researchers should consider expanding to multiple states broadening the sample collections.

Future researchers might consider conducting a mixed-method research design. A limitation of this study was the number of available participants limiting the data collection process. The single case study research design limits the number of participants available for data collection based on the time spent interviewing participants. Future researchers can capture information-rich data through interviews and analyze a larger number of participants through surveys.

Reflections

The doctoral process is a rigorous process I chose to embrace more than five years past. When I reflect on my scholarly journey, the early stages contained personal biases and preconceived notions that I knew how the journey would start and end. The predominate personal bias I harbored was researcher bias. I have 30 years of management experience and understand managerial practices utilized for effective and efficient automotive and logistic strategies. My researcher bias was a bias I had to mitigate during the data analysis portion of my research. A method I employed to mitigate my researcher bias was member checking. Ensuring the accurate reflection of the participants' words in the data collection and analysis process helped me identify my bias and remove my personal bias from the research process. I adhered to the rigorous doctoral process mitigating any preconceived notions of what I thought should be the research question answers.

The overall doctoral process was challenging and rewarding. Although the process has taken me longer than I would have liked to complete, the journey was worth every step. The doctoral process has changed my thinking regarding other intellectual

professionals holding doctoral level degrees. Knowing other doctoral graduates took the same journey I did helps me appreciate the wealth of knowledge available they possess. Upon completing this study, I learned the benefit of obtaining a doctorate degree holding person view on a topic would greatly enhance future research efforts.

Conclusion

Based on the results of this study, automotive industry managers who utilize effective communication, inspection, and process strategies to minimize the use of products contributing to a product recall may enhance company operations in a complex, high-risk, time focused industry. Through the lens of the high-reliability theory, the purpose of this single case study was to explore strategies automotive industry managers in one Michigan company use to minimize the use of procedures or materials that can contribute to a product recall. The participants in this study consisted of three automotive industry managers in one company with more than 10 years' experience. The strategies the participants used increased the possibility of minimizing the use of products that could contribute to a product recall. The findings indicated that implementing strategies to improve communications, increase product inspections, and development of process strategies potentially increases managers' ability to identify products that can contribute to a product recall. The implications for positive social change include the potential for automotive managers to provide more trustworthy and dependable automobiles and increased stakeholder trust, satisfaction, and loyalty.

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Appendix A: Interview Protocol

Interview preparation.

1. I contact the automotive organizations public websites and social media portals to arrange interview times, personnel meeting interview parameters, and interview locations.
2. I will email the participant an Informed Consent form requesting permission to participate in my doctoral research. Participants may provide their informed consent by replying “I consent” to the email.
3. I will prepare the resources required to conduct the interview, including a voice recorder, multiple Informed Consent form copies, note taking materials, and confirm the interview location allows for data collection confidentiality.

Opening the interview.

1. I will start the interview with introductions and the research study description.
2. I will explain the Informed Consent form, ensure the participant understands I will record the interview for transcription purposes, and reaffirm the participant's rights to interview cancelation and confidentiality mandates.
3. I will collect the signed Informed Consent form if they choose to sign the form before continuing the interview process. I will use the participants “I consent” email response if the participant provides consent via email.
4. I will explain the benefits from my research may enhance automotive industry recall standards and increase safety standards for the industry.

Conducting the Interview.

1. I will turn on the recording device and reminding the participant they may stop the interview process at any time for any reason.
2. I will ask the first interview question ensuring to watch for non-verbal cues and listening for potential follow-up probing questions to gain a deeper understanding of the participant's answer.
3. I will paraphrase the participant's answer to confirm my understanding of the answer.
4. I will take hand written notes of non-verbal cues and develop potential follow-up probing questions if needed.

Ending the Interview.

1. I will thank the participant for participating in the interview process.
2. I will inform the participant I will contact them at a later date to verify the data collection accuracy by engage in member checking to obtain any additional information they might offer.
3. I will end the interview making sure the participant has all questions answered and my contact information.

Appendix B: Invitation to Participate in E-mail or Telephone Script

Date:

Hello _____:

My name is Joe Hansen. I am a doctoral student at Walden University. I am conducting a study on strategies some automotive industry managers use to minimize the use of products that contribute to a product recall. The title of my study is Strategies to Minimize the Use of Automotive Products that Contribute to Recalls. I identified you as a potential participant in my study through the business website and other social media platforms. I would like you to consider being a participant in my study, participate in a 45-60-minute face-to-face interview, and participate in a 30-minute follow-up meeting so that you could review my interpretation of your interview responses.

This study could potentially benefit the automotive industry by providing effective strategies to minimize the use of automotive products that contribute to recalls. The eligible criteria to participate in my research study are (a) manager in the automotive industry, (b) located in southeastern Michigan, and (c) who successfully implemented strategies to minimize the use of products that contribute to product recalls. If you meet the eligibility criteria, would you be willing to participate? I have attached an informed consent form to this email to explain the interview process further, explain the risks and benefits of participating in the study, and address confidentiality and privacy concerns before the interview. Please read the informed consent form carefully and ask any questions you may have before making a decision. Participation is voluntary, and you have the right to withdraw from the study at any time. You can provide your agreement to participate by replying, "I consent" to this email. If you prefer, you can sign the informed consent form and return a copy to me. You can contact me by email or telephone if you have questions.

Thank you for your consideration.

Joe Hansen

E-mail address: xxxxxx.xxxxxx@xxxxx.xxx

Telephone: xxx-xxx-xxxx